INVENTORY OF PHYSICAL FACILITIES OF ONTARIO UNIVERSITIES 1989-90

COUNCIL OF ONTARIO UNIVERSITIES

CONSEIL DES UNIVERSITÉS DE L'ONTARIO

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INTRODUCTION

The 1989-90 **Inventory of Physical Facilities of Ontario Universities** is the latest in a series of triennial surveys that have been conducted by COU using space standards originally developed by the Task Force - Space and Utilization and published in Volume 1 of the **Building Blocks** series of reports. The most recent revisions of the COU space standards were published in *Building Blocks, Volume 7: Final Report of the Task Force to Review Space Standards* (January 1988).

The following tables present inventory data as of 1 November 1989 based on institutional submissions received in Spring and Summer 1990. Design of the survey and analysis of the data was guided by the Committee on Space Standards and Reporting, chaired by Mr. A. E. Lappin, University of Waterloo.

Table 1 is a summary of **all** net assignable square metres (NASM), by institution, for categories of space covered by COU space standards (categories 1-15) and for categories of space in which standards do not apply (categories 17-20). The column labelled "Scheduled for Demolition provides an indication of the NASM reported in categories 1-15 which institutions are presently planning to demolish. The column labelled "Under Construction" includes data on space which was under construction as of November 1, 1989. The column labelled "Equivalent to Rental Space" shows space in federated or affiliated colleges which is used by a constituent university for its own academic programmes. The column labelled "NASM Rentals" reflects the space reported in categories 1- 15 which was being rented as of November 1989. The rental costs associated with this space, for the 1989-90 fiscal year are reported in the column "Rental Costs".

Table 2 presents a detailed breakdown of **all** NASM, by institutions, for each of the 20 space categories defined by the Subcommittee on Space Coding and originally published in Volume 6 of **Building Blocks** (December 1978) and described in Appendix B.

Table 3 presents a distribution of NASM (categories 1-15) by age and excluding rentals. Age was determined according to the year of completion of a building cited or the year of major renovation. The final column, "Average Age" is a weighted average.

Tables 4-22 present institutional space requirements as measured by the revised COU space standards by comparison to actual inventory. It should be noted that the data in these and all subsequent tables include, space scheduled for

demolition, equivalent to rental space and rentals. Further, no provision for age or quality has been made.

The Ontario Institute for Studies in Education has not participated in the space inventory surveys and the Ontario College of Art did not report for 1989-90.

Tables 23-32 provide analyses of space generated and inventoried by space type.

Table 33 summarizes space generated and space inventoried per FTE student.

Table A1-A2: Institutional space requirements and actual inventory for two of the three Laurentian University affiliated institutions, Nipissing University College and Collège Universitaire de Hearst, are presented separately (Algoma University College did not submit data). The COU space standards were originally developed for use in institutions with a wide range of programmes at the undergraduate and graduate levels. Their applicability to very small or special purpose institutions is questionable. Therefore, data for these institutions were not included in the summary tables.

Table 1

INVENTORY OF UNVERSITY SPACE, November 1, 1989

INSTITUTION	NASM CATEGORIES 1-15	NASM CATEGORIES 17-20	SCHEDULED FOR DEMOLITION	UNDER CONSTRCTN	EQUIV TO RENTAL SPACE	NASM RENTALS	RENTAL COSTS
Brock	43,682	15,948	0	0	0	0	0
Carleton	106,122	21,660	0	15,030	0	0	0
Guelph	176,134	85,067	15,964	3,818	0	1,808	99,856
Lakehead	48,670	15,150	340	1,224	0	1,312	150,000
Laurentian	42,363	23,398	0	11,177	558	0	50,000
McMaster	156,579	94,037	0	0	0	245	26,150
Ottawa	148,121	44,106	2,770	8,057	0	670	151,500
Queen's	183,229	96,802	32,080	0	0	0	0
Ryerson	96,844	5,507	0	24,002	0	1,569	484,710
Toronto - St. George	412,474	65,345	1,306	0	27,141	2,717	234,064
Toronto - Erindale	37,395	14,175	0	0	0	0	0
Toronto - Scarborough	31,864	9,946	0	0	0	0	0
Trent	34,896	18,554	0	3,738	0	2,547	143,030
Waterloo	176,401	88,337	507	0	0	2,946	113,615
Western	212,429	67,240	0	22,874	0	157	20,000
WLU	41,349	15,730	2,207	0	738	307	29,000
Windsor	98,510	28,472	0	0	0	918	87,847
York - Main	149,665	67,278	0	37,077	0	2,735	155,450
York - Glendon	14,846	7,436	0	0	0	0	0
TOTAL	2,211,574	784,186	55,173	126,997	28,437	17,930	$1,745,222

Table 2

DISTRIBUTION OF NASM BY MAJOR SPACE CATEGORY AND INSTITUTION, 1989-90

	CLASSROOM FACILTIES	LAB UNDRGRD	LAB GRAD & FACULTY	ACAD OFFICE & RELATED	LIBRARY & STUDY FACILTIES	RECREATN/ ATHLETIC SPACE	FOOD SERVICE	BOOKSTORE & MERCH FACILTIES	PLANT MAINTNCE	ADMIN OFFICE & RELATED	AV/TV FACILTIES	CENTRAL SERVICES
Brock	4,665	5,181	4,432	6,448	4,715	6,944	1,630	616	1,252	2,534	208	1,086
Carleton	12,704	16,427	8,655	22,082	10,810	8,192	6,748	1,515	1,733	8,417	872	2,475
Guelph	11,927	23,441	47,119	24,675	12,500	11,661	6,761	2,041	5,175	17,062	685	3,642
Lakehead	4,903	10,932	3,342	5,814	5,193	5,559	2,414	543	1,315	3,199	223	1,494
Laurentian	5,524	5,827	2,620	5,412	6,231	6,481	2,908	508	655	2,661	536	1,025
McMaster	13,457	16,589	34,999	26,486	20,668	7,565	5,192	2,016	3,620	12,721	675	5,393
Ottawa	17,041	18,317	19,389	31,167	17,491	8,419	3,461	1,714	1,069	17,144	706	2,102
Queen's	16,177	28,075	26,982	33,775	22,149	12,850	7,653	3,235	3,742	11,395	292	3,667
Ryerson	11,617	30,605	0	10,852	8,864	6,435	3,692	1,370	2,428	8,267	1,667	3,026
Toronto - St. George	36,671	48,942	74,057	76,387	74,773	26,136	9,310	3,538	6,031	28,105	1,709	3,797
Toronto - Erindale	4,884	5,970	5,915	5,089	3,665	2,380	2,428	549	618	1,657	211	918
Toronto - Scarborough	3,042	5,926	4,159	3,381	3,201	3,955	1,457	348	1,055	1,934	546	733
Trent	4,398	3,356	2,614	4,568	5,432	3,475	3,315	826	453	3,243	137	642
Waterloo	14,992	24,253	33,630	31,943	15,951	9,431	8,590	2,090	5,342	11,541	645	6,117
Western	20,468	30,671	28,071	38,254	25,679	14,488	9,735	2,772	5,231	18,977	778	5,548
WLU	6,064	3,244	1,029	5,304	6,649	4,373	2,068	625	883	4,490	374	1,060
Windsor	9,337	16,832	9,792	15,004	15,116	9,931	3,543	1,191	2,006	6,549	1,856	1,596
York - Main Campus	18,885	14,635	11,527	30,130	19,746	7,473	6,187	3,362	1,828	18,994	1,233	3,754
York - Glendon	1,813	1,081	143	2,432	1,747	3,133	1,277	397	398	1,165	12	181
TOTAL	218,568	310,303	318,474	382,202	280,579	158,880	90,372	29,254	44,833	180,054	13,363	48,276

Table 2 (cont'd)

	HEALTH SERVICE FACILTIES	COMMN & STUDENT ACTIVITY SPACE	ASSMBLY & EXHIBITN FACILTIES	SUBTOTAL FORMULA AREAS	NON-ASSIGNBLE	RESIDNTL SPACE	ANIMAL SPACE	OTHER	HLTH SCI CLINICAL FACILTIES	SUBTOTAL NON-FORMLA	TOTAL
Brock	87	1,383	2,504	43,683	44,610	15,601	0	147	0	60,558	104,240
Carleton	282	4,037	1,174	106,122	66,960	21,157	0	503	0	88,639	194,761
Guelph	258	3,975	3,434	174,356	121,231	70,445	2,931	2,745	6,146	203,498	377,854
Lakehead	53	1,894	1,792	48,669	30,092	13,129	0	2,021	0	45,242	93,911
Laurentian	67	474	1,434	42,363	2,500	22,949	449	0	0	25,898	68,261
McMaster	278	5,142	1,781	156,579	90,079	39,584	0	1,334	53,120	184,116	340,695
Ottawa	338	7,697	2,066	148,121	108,824	38,082	1,236	3,213	1,575	152,930	301,051
Queen's	747	6,373	5,547	182,658	117,842	75,047	1,659	5,405	9,414	209,367	392,025
Ryerson	139	5,560	2,522	97,044	15,558	0	0	5,507	0	21,065	118,109
Toronto - St. George	879	11,614	10,526	412,474	267,992	32,294	0	24,313	8,738	333,336	745,810
Toronto - Erindale	113	1,927	1,072	37,395	26,500	13,977	0	198	0	40,675	78,070
Toronto - Scarborough	77	1,743	305	31,864	22,292	8,301	0	1,645	0	32,237	64,101
Trent	93	2,200	145	34,897	25,907	17,901	0	653	0	44,461	79,358
Waterloo	611	5,704	2,564	176,403	122,144	84,530	0	2,873	935	210,481	386,884
Western	1,341	6,344	4,072	212,429	115,788	63,066	1,279	2,895	0	183,028	395,457
WLU	168	2,666	2,025	41,042	25,373	15,443	0	287	0	41,103	82,145
Windsor	203	4,292	1,263	98,510	48,010	26,243	0	2,209	0	76,482	174,992
York - Main Campus	148	6,766	2,998	149,664	106,705	65,342	0	1,936	0	173,983	323,646
York - Glendon	98	845	125	14,847	11,611	7,349	0	87	0	19,047	33,894
TOTAL	5,980	80,633	47,349	2,209,120	1,370,036	630,660	7,554	57,968	79,927	2,146,145	4,355,265

Table 3

AGE PROFILE OF ONTARIO UNIVERSITY SPACE
(as of 1 November, 1989) *

INSTITUTION	NASM 0-9 YEARS	NASM 10-19 YEARS	NASM 20-29 YEARS	NASM 30-39 YEARS	NASM 40-49 YEARS	NASM 50+ YEARS	TOTAL NASM	AVERAGE AGE
Brock	208	26,394	17,080	0	0	0	43,682	18.29
Carleton	935	26,976	64,122	14,088	0	0	106,122	22.38
Guelph	6,445	33,830	76,497	22,923	4,695	29,936	174,327	31.11
Lakehead	990	26,097	14,608	5,543	121	0	47,358	21.63
Laurentian	1,523	22,189	18,651	0	0	0	42,363	19.81
McMaster	2,345	65,847	59,097	24,158	1,582	3,305	156,334	22.81
Ottawa	21,186	68,600	11,771	20,136	2,284	23,475	147,452	28.65
Queen's	26,006	64,613	65,640	11,192	1,688	14,089	183,229	23.09
Ryerson	13,891	40,547	25,749	15,088	0	0	95,275	19.71
Toronto - St. George	44,067	96,190	170,847	29,230	11,047	58,376	409,757	28.58
Toronto - Erindale	0	30,177	7,218	0	0	0	37,395	18.32
Toronto - Scarborough	226	12,492	19,147	0	0	0	31,864	18.00
Trent	375	8,708	20,698	0	135	2,433	32,349	24.90
Waterloo	28,722	34,035	96,890	13,808	0	0	173,455	19.36
Western	5,128	62,004	85,556	38,718	20,866	0	212,272	24.92
WLU	15,058	15,614	6,356	2,015	0	0	41,042	15.20
Windsor	8,808	33,228	46,763	4,411	2,226	2,156	97,592	21.67
York - Main Campus	8,475	47,571	90,884	0	0	0	146,930	19.30
York - Glendon	0	0	13,482	0	0	1,364	14,846	29.61
TOTAL	184,389	715,112	913,055	201,310	44,643	135,134	2,193,643	24.07

* Excludes Rentals.

Table 4

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

BROCK

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	6,339.90	1.2	7,607.88	4,665.20	61.3
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	6,902.50	0.6	4,141.50	3,575.90	
Lab Contact Hours Y	3,876.50	0.5	1,938.25	1,049.80	
Lab Contact Hours Z	2,084.00	0.3	625.20	555.50	
Total Class Lab			6,704.95	5,181.20	77.3
RESEARCH					
Research Disciplines A	72.76	45.0	3,274.20	3,377.80	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	31.10	20.0	622.00	710.70	
Research Disciplines D	45.64	10.0	456.40	254.40	
Research Disciplines E	386.05	1.0	386.05	89.10	
Total Research			4,738.65	4,432.00	93.5
OFFICE - ACADEMIC					
Total FTE Faculty	384.40	13.0	4,997.20		
Faculty Supplement	57.66	13.0	749.58		
Total FTE Grads	274.30	4.0	1,097.20		
Total FTE Non-Acd Staff	82.00	13.0	1,066.00		
Office Service	7,909.98	0.3	2,372.99		
Total Academic Office			10,282.97	6,447.70	62.7
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	299.00	13.0	3,887.00		
Office Service	3,887.00	0.3	1,166.10		
Total Admin. Office			5,053.10	2,533.60	50.1
Total Office			15,336.07	8,981.30	58.6
LIBRARY					
10% of Total Eq. Volumes	77,428.40	0.004	309.71		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	96,855.60	0.005	484.28		
Total Stack	774,284.00		4,693.99	2,510.40	53.5
FTE UG - Excl. Prof.	5,750.40	0.5	2,875.20		
FTE UG - Professional	315.20	1.0	315.20		
FTE Grads	274.30	0.7	192.01		
Total Study	6,339.90		3,382.41	1,483.70	43.9
Library Support	8,076.40	0.25	2,019.10	720.60	35.7
Total Library			10,095.50	4,714.70	46.7
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	6,339.90		1,000.00		
Total FTE Students	6,339.90	0.9	5,705.91		
Total P.E./Athletics			6,705.91	6,943.90	103.5
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	59,630.00	0.015	894.45	1,252.40	140.0
STUDENT AND CENTRAL SERVICES					
Total FTE Students	6,339.90	2.0	12,679.80	7,512.40	59.2
TOTAL FORMULA AREAS			64,763.22	43,683.10	67.5

Table 5

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

CARLETON

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	14,350.92	1.2	17,581.11	12,703.70	72.3
CLASS LABS					
Lab Contact Hours W	3,946.00	0.8	3,156.80	2,223.90	
Lab Contact Hours X	18,876.50	0.6	11,325.90	12,209.90	
Lab Contact Hours Y	1,317.00	0.5	658.50	593.60	
Lab Contact Hours Z	1,792.00	0.3	537.60	1,399.70	
Total Class Lab			15,678.80	16,427.10	104.8
RESEARCH					
Research Disciplines A	158.95	45.0	7,152.75	4,533.60	
Research Disciplines B	191.25	30.0	5,737.50	1,911.50	
Research Disciplines C	101.05	20.0	2,021.00	1,151.50	
Research Disciplines D	88.55	10.0	885.50	526.20	
Research Disciplines E	954.58	1.0	954.58	531.70	
Total Research			16,751.33	8,654.50	51.7
OFFICE - ACADEMIC					
Total FTE Faculty	656.83	13.0	8,538.79		
Faculty Supplement	98.52	13.0	1,280.82		
Total FTE Grads	1,629.10	4.0	6,516.40		
Total FTE Non-Acd Staff	241.10	13.0	3,134.30		
Office Service	19,470.31	0.3	5,841.09		
Total Academic Office			25,311.40	22,082.30	87.2
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	621.75	13.0	8,082.75		
Office Service	8,082.75	0.3	2,424.83		
Total Admin. Office			10,507.58	8,417.10	80.1
Total Office			35,818.98	30,499.40	85.1
LIBRARY					
10% of Total Eq. Volumes	175,309.10	0.004	701.24		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	977,781.90	0.005	4,888.91		
Total Stack	1,753,091.00		9,490.15	5,144.40	54.2
FTE UG - Excl. Prof.	13,021.82	0.5	6,510.91		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	1,629.10	0.7	1,140.37		
Total Study	14,650.92		7,651.28	2,520.40	32.9
Library Support	17,141.43	0.25	4,285.36	3,145.40	73.4
Total Library			21,426.78	10,810.20	50.5
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	14,650.92	0.9	13,185.83		
Total P.E./Athletics			13,185.83	8,191.70	62.1
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	127,781.50	0.015	1,916.72	1,732.70	90.4
STUDENT AND CENTRAL SERVICES					
Total FTE Students	14,650.92	2.0	29,301.84	17,102.40	58.4
TOTAL FORMULA AREAS			151,661.39	106,121.70	70.0

Table 6

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

GUELPH	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	11,685.76	1.2	14,022.91	11,926.57	85.1
CLASS LABS					
Lab Contact Hours W	21,356.70	0.8	17,085.36	9,565.66	
Lab Contact Hours X	29,632.20	0.6	17,779.32	10,732.66	
Lab Contact Hours Y	5,030.50	0.5	2,515.25	2,061.16	
Lab Contact Hours Z	4,792.10	0.3	1,437.63	716.22	
Total Class Lab			38,817.56	23,075.70	59.4
RESEARCH					
Research Disciplines A	785.70	45.0	35,356.50	35,617.84	
Research Disciplines B	35.08	30.0	1,052.40	1,254.73	
Research Disciplines C	55.31	20.0	1,106.20	499.24	
Research Disciplines D	179.85	10.0	1,798.50	3,964.19	
Research Disciplines E	454.20	1.0	454.20	372.25	
Total Research			39,767.80	41,708.25	104.9
OFFICE - ACADEMIC					
Total FTE Faculty	856.49	13.0	11,134.37		
Faculty Supplement	128.47	13.0	1,670.16		
Total FTE Grads	1,252.30	4.0	5,009.20		
Total FTE Non-Acd Staff	664.00	13.0	8,632.00		
Office Service	26,445.73	0.3	7,933.72		
Total Academic Office			34,379.44	24,675.24	71.8
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	706.00	13.0	9,178.00		
Office Service	9,178.00	0.3	2,753.40		
Total Admin. Office			11,931.40	17,062.00	143.0
Total Office			46,310.84	41,737.24	90.1
LIBRARY					
10% of Total Eq. Volumes	275,824.40	0.004	1,103.30		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	1,682,419.60	0.005	9,412.10		
Total Stack	2,758,244.00		14,415.40	5,579.01	38.7
FTE UG - Excl. Prof.	10,034.46	0.5	5,017.23		
FTE UG - Professional	399.00	1.0	399.00		
FTE Grads	1,252.30	0.7	876.61		
Total Study	11,685.76		6,292.84	4,455.29	70.8
Library Support	20,708.24	0.25	5,177.06	2,465.93	47.6
Total Library			25,885.29	12,500.23	48.3
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	11,685.76	0.9	10,517.18		
Total P.E./Athletics			10,517.18	11,660.64	110.9
MAINTENANCE SHOPS					
Total NASM Inv. (exc: 16.0)	256,623.43	0.015	3,849.35	5,174.85	134.4
STUDENT AND CENTRAL SERVICES					
Total FTE Students	11,685.76	2.0	23,371.52	20,796.92	89.0
TOTAL FORMULA AREAS			202,542.47	168,580.40	83.2

Table 7

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

LAKEHEAD	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	4,328.58	1.2	5,194.30	4,903.40	94.4
CLASS LABS					
Lab Contact Hours W	1,680.00	0.8	1,344.00	2,723.50	
Lab Contact Hours X	8,202.50	0.6	4,921.50	6,500.70	
Lab Contact Hours Y	2,410.00	0.5	1,205.00	1,042.90	
Lab Contact Hours Z	4,187.00	0.3	1,256.10	664.40	
Total Class Lab			8,726.60	10,931.50	125.3
RESEARCH					
Research Disciplines A	46.31	45.0	2,083.95	1,850.80	
Research Disciplines B	71.10	30.0	2,133.00	754.80	
Research Disciplines C	36.75	20.0	735.00	345.90	
Research Disciplines D	79.48	10.0	794.80	390.20	
Research Disciplines E	116.57	1.0	116.57	0.00	
Total Research			5,863.32	3,341.70	57.0
OFFICE - ACADEMIC					
Total FTE Faculty	295.75	13.0	3,844.75		
Faculty Supplement	44.36	13.0	576.71		
Total FTE Grads	182.80	4.0	731.20		
Total FTE Non-Acd Staff	102.50	13.0	1,332.50		
Office Service	6,485.16	0.3	1,945.55		
Total Academic Office			8,430.71	5,813.70	69.0
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	229.00	13.0	2,977.00		
Office Service	2,977.00	0.3	893.10		
Total Admin. Office			3,870.10	3,199.30	82.7
Total Office			12,300.81	9,013.00	73.3
LIBRARY					
10% of Total Eq. Volumes	71,145.60	0.004	284.58		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	40,310.40	0.005	201.55		
Total Stack	711,456.00		4,386.13	2,553.30	58.2
FTE UG - Excl. Prof.	4,014.63	0.5	2,007.32		
FTE UG - Professional	126.00	1.0	126.00		
FTE Grads	182.80	0.7	127.96		
Total Study	4,323.43		2,261.28	1,592.60	70.4
Library Support	6,647.41	0.25	1,661.85	1,047.20	63.0
Total Library			8,309.26	5,193.10	62.5
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	4,328.58		1,000.00		
Total FTE Students	4,328.58	0.9	3,895.72		
Total P.E./Athletics			4,895.72	5,558.60	113.5
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	63,818.60	0.015	957.28	1,315.30	137.4
STUDENT AND CENTRAL SERVICES					
Total FTE Students	4,328.58	2.0	8,657.16	8,412.60	97.2
TOTAL FORMULA AREAS			54,904.45	48,669.20	88.6

Table 8

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

LAURENTIAN	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	4,550.75	1.2	5,460.90	5,524.00	101.2
CLASS LABS					
Lab Contact Hours W	300.50	0.8	240.40	0.00	
Lab Contact Hours X	5,586.00	0.6	3,352.80	0.00	
Lab Contact Hours Y	2,969.50	0.5	1,484.75	0.00	
Lab Contact Hours Z	141.00	0.3	42.30	0.00	
Total Class Lab			5,120.25	5,827.00	113.8
RESEARCH					
Research Disciplines A	67.25	45.0	3,026.25	0.00	
Research Disciplines B	15.20	30.0	456.00	0.00	
Research Disciplines C	31.35	20.0	627.00	0.00	
Research Disciplines D	57.80	10.0	578.00	0.00	
Research Disciplines E	169.60	1.0	169.60	0.00	
Total Research			4,856.85	2,620.00	53.9
OFFICE - ACADEMIC					
Total FTE Faculty	291.60	13.0	3,790.80		
Faculty Supplement	43.74	13.0	568.62		
Total FTE Grads	91.20	4.0	364.80		
Total FTE Non-Acd Staff	94.50	13.0	1,228.50		
Office Service	5,952.72	0.3	1,785.82		
Total Academic Office			7,738.54	5,412.00	69.9
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	240.50	13.0	3,126.50		
Office Service	3,126.50	0.3	937.95		
Total Admin. Office			4,064.45	2,661.00	65.5
Total Office			11,802.99	8,073.00	68.4
LIBRARY					
10% of Total Eq. Volumes	88,904.40	0.004	355.62		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	200,139.60	0.005	1,000.70		
Total Stack	889,044.00		5,256.32	2,961.00	56.3
FTE UG - Excl. Prof.	4,195.05	0.5	2,097.53		
FTE UG - Professional	264.50	1.0	264.50		
FTE Grads	91.20	0.7	63.84		
Total Study	4,550.75		2,425.87	1,714.00	70.7
Library Support	7,682.18	0.25	1,920.55	1,556.00	81.0
Total Library			9,602.73	6,231.00	64.9
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	4,550.75		1,000.00		
Total FTE Students	4,550.75	0.9	4,095.67		
Total P.E./Athletics			5,095.67	6,481.00	127.2
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	65,761.00	0.015	986.42	655.00	66.4
STUDENT AND CENTRAL SERVICES					
Total FTE Students	4,550.75	2.0	9,101.49	6,952.00	76.4
TOTAL FORMULA AREAS			52,027.29	42,363.00	81.4

Table 9

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

McMASTER

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	13,476.70	1.2	16,172.04	13,456.70	83.2
CLASS LABS					
Lab Contact Hours W	4,373.00	0.8	3,498.40	1,484.08	
Lab Contact Hours X	18,550.50	0.6	11,130.30	10,267.42	
Lab Contact Hours Y	11,878.50	0.5	5,939.25	2,787.21	
Lab Contact Hours Z	3,212.00	0.3	963.60	2,030.10	
Total Class Lab			21,531.55	16,588.81	77.0
RESEARCH					
Research Disciplines A	512.50	45.0	23,062.50	22,263.79	
Research Disciplines B	342.75	30.0	10,282.50	8,627.11	
Research Disciplines C	48.40	20.0	968.00	2,957.70	
Research Disciplines D	130.50	10.0	1,305.00	1,089.28	
Research Disciplines E	784.20	1.0	784.20	61.20	
Total Research			36,402.20	34,999.08	96.1
OFFICE - ACADEMIC					
Total FTE Faculty	879.80	13.0	11,437.40		
Faculty Supplement	131.97	13.0	1,715.61		
Total FTE Grads	1,713.10	4.0	6,852.40		
Total FTE Non-Acd Staff	448.10	13.0	5,825.30		
Office Service	25,830.71	0.3	7,749.21		
Total Academic Office			33,579.92	26,485.60	78.9
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	681.60	13.0	8,860.80		
Office Service	8,860.80	0.3	2,658.24		
Total Admin. Office			11,519.04	12,720.90	110.4
Total Office			45,098.96	39,206.50	86.9
LIBRARY					
10% of Total Eq. Volumes	229,182.30	0.004	916.73		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	1,462,640.70	0.005	7,313.20		
Total Stack	2,291,823.00		12,129.93	12,618.30	104.0
FTE UG - Excl. Prof.	11,216.20	0.5	5,608.10		
FTE UG - Professional	547.40	1.0	547.40		
FTE Grads	1,713.10	0.7	1,199.17		
Total Study	13,476.70		7,354.67	4,497.20	61.1
Library Support	19,484.60	0.25	4,871.15	3,552.00	72.9
Total Library			24,355.75	20,667.50	84.9
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	13,476.70	0.9	12,129.03		
Total P.E./Athletics			12,129.03	7,565.40	62.4
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	250,616.50	0.015	3,759.25	3,620.00	96.3
STUDENT AND CENTRAL SERVICES					
Total FTE Students	13,476.70	2.0	26,953.40	20,475.10	76.0
TOTAL FORMULA AREAS			186,402.18	156,579.09	84.0

Table 10

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

OTTAWA	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	16,950.37	1.2	20,340.44	17,041.04	83.8
CLASS LABS					
Lab Contact Hours W	2,163.30	0.8	1,730.64	2,703.44	
Lab Contact Hours X	18,897.40	0.6	11,338.44	10,167.48	
Lab Contact Hours Y	5,287.50	0.5	2,643.75	4,011.10	
Lab Contact Hours Z	10,543.00	0.3	3,162.90	1,371.98	
Total Class Lab			18,875.73	18,254.00	96.7
RESEARCH					
Research Disciplines A	251.43	45.0	11,314.13	12,612.92	
Research Disciplines B	249.85	30.0	7,495.50	4,347.27	
Research Disciplines C	190.95	20.0	3,819.00	1,853.38	
Research Disciplines D	85.05	10.0	850.50	352.79	
Research Disciplines E	1,289.05	1.0	1,289.05	222.33	
Total Research			24,768.18	19,388.69	78.3
OFFICE - ACADEMIC					
Total FTE Faculty	1,011.50	13.0	13,149.50		
Faculty Supplement	151.73	13.0	1,972.43		
Total FTE Grads	2,037.51	4.0	8,150.04		
Total FTE Non-Acd Staff	497.20	13.0	6,463.60		
Office Service	29,735.57	0.3	8,920.67		
Total Academic Office			38,656.23	31,167.46	80.6
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	750.80	13.0	9,760.40		
Office Service	9,760.40	0.3	2,928.12		
Total Admin. Office			12,688.52	17,143.72	135.1
Total Office			51,344.75	48,311.18	94.1
LIBRARY					
10% of Total Eq. Volumes	245,310.40	0.004	981.24		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	1,607,793.60	0.005	8,038.97		
Total Stack	2,453,104.00		12,920.21	11,160.27	86.4
FTE UG - Excl. Prof.	12,470.86	0.5	6,235.43		
FTE UG - Professional	2,442.00	1.0	2,442.00		
FTE Grads	2,037.51	0.7	1,426.26		
Total Study	16,950.37		10,103.69	2,553.19	25.3
Library Support	23,023.90	0.25	5,755.97	3,777.66	65.6
Total Library			28,779.87	17,491.12	60.8
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	16,950.37	0.9	15,255.33		
Total P.E./Athletics			15,255.33	8,419.45	55.2
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	192,228.09	0.015	2,883.42	1,068.53	37.1
STUDENT AND CENTRAL SERVICES					
Total FTE Students	16,950.37	2.0	33,900.74	18,083.91	53.3
TOTAL FORMULA AREAS			196,148.47	148,057.92	75.5

Table 11

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

QUEEN'S

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	13,933.00	1.2	16,719.60	16,178.90	96.8
CLASS LABS					
Lab Contact Hours W	6,827.00	0.8	5,461.60	6,147.40	
Lab Contact Hours X	31,361.00	0.6	18,828.60	17,195.90	
Lab Contact Hours Y	8,444.00	0.5	4,222.00	3,745.00	
Lab Contact Hours Z	2,345.00	0.3	703.50	987.20	
Total Class Lab			29,215.70	28,075.50	96.1
RESEARCH					
Research Disciplines A	434.50	45.0	19,552.50	18,336.80	
Research Disciplines B	243.00	30.0	7,290.00	7,440.00	
Research Disciplines C	103.50	20.0	2,070.00	2,196.00	
Research Disciplines D	159.15	10.0	1,591.50	1,307.30	
Research Disciplines E	985.10	1.0	985.10	701.30	
Total Research			31,489.10	26,982.30	85.7
OFFICE - ACADEMIC					
Total FTE Faculty	836.00	13.0	10,868.00		
Faculty Supplement	125.40	13.0	1,630.20		
Total FTE Grads	2,059.00	4.0	8,236.00		
Total FTE Non-Acd Staff	314.00	13.0	4,082.00		
Office Service	24,816.20	0.3	7,444.86		
Total Academic Office			32,261.06	33,775.00	104.7
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	563.00	13.0	7,319.00		
Office Service	7,319.00	0.3	2,195.70		
Total Admin. Office			9,514.70	11,395.20	119.8
Total Office			41,775.76	45,170.20	108.1
LIBRARY					
10% of Total Eq. Volumes	249,244.10	0.004	996.98		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	1,643,196.90	0.005	8,215.98		
Total Stack	2,492,441.00		13,112.96	9,805.70	74.8
FTE UG - Excl. Prof.	10,462.00	0.5	5,231.00		
FTE UG - Professional	1,412.00	1.0	1,412.00		
FTE Grads	2,059.00	0.7	1,441.30		
Total Study	13,933.00		8,084.30	7,930.50	98.1
Library Support	21,197.26	0.25	5,299.32	4,413.00	83.3
Total Library			26,496.58	22,149.20	83.5
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	13,933.00	0.9	12,539.70		
Total P.E./Athletics			12,539.70	12,850.00	102.5
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	279,245.00	0.015	4,188.68	3,741.50	89.3
STUDENT AND CENTRAL SERVICES					
Total FTE Students	13,933.00	2.0	27,866.00	27,513.40	98.7
TOTAL FORMULA AREAS			190,291.11	182,659.00	96.0

Table 12

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

RYERSON	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	11,660.81	1.2	13,992.97	11,617.30	83.0
CLASS LABS					
Lab Contact Hours W	8,564.60	0.8	6,851.68	5,071.78	
Lab Contact Hours X	42,485.90	0.6	25,491.54	19,733.30	
Lab Contact Hours Y	6,784.60	0.5	3,392.30	2,396.50	
Lab Contact Hours Z	17,027.69	0.3	5,108.31	3,214.90	
Total Class Lab			40,843.82	30,416.48	74.5
RESEARCH					
Research Disciplines A	0.00	45.0	0.00	0.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	0.00	20.0	0.00	0.00	
Research Disciplines D	0.00	10.0	0.00	0.00	
Research Disciplines E	0.00	1.0	0.00	0.00	
Total Research			0.00	0.00	
OFFICE - ACADEMIC					
Total FTE Faculty	679.70	13.0	8,836.10		
Faculty Supplement	101.96	13.0	1,325.42		
Total FTE Grads	0.00	4.0	0.00		
Total FTE Non-Acd Staff	191.25	13.0	2,486.75		
Office Service	12,647.77	0.3	3,794.33		
Total Academic Office			16,442.09	10,651.50	66.0
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	505.85	13.0	6,576.05		
Office Service	6,576.05	0.3	1,972.82		
Total Admin. Office			8,548.87	8,266.80	96.7
Total Office			24,990.96	19,118.30	76.5
LIBRARY					
10% of Total Eq. Volumes	57,536.10	0.004	230.14		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	217,824.90	0.006	1,306.95		
Remainder	0.00	0.005	0.00		
Total Stack	575,361.00		3,637.09	7,068.90 *	
FTE UG - Excl. Prof.	11,660.81	0.5	5,830.41		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	0.00	0.7	0.00		
Total Study	11,660.81		5,830.41		
Library Support	9,467.50	0.25	2,366.87	1,795.10	75.8
Total Library			11,834.37	8,864.00	74.9
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	11,660.81	0.9	10,494.73		
Total P.E./Athletics			10,494.73	6,434.80	61.3
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	102,351.10	0.015	1,535.27	2,427.80	158.1
STUDENT AND CENTRAL SERVICES					
Total FTE Students	11,660.81	2.0	23,321.62	17,977.40	77.1
TOTAL FORMULA AREAS			127,013.74	96,856.08	76.3

* Includes both Stack and Study Space.

Table 13

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

TORONTO (ST. GEORGE)

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	30,446.40	1.2	36,535.68	36,670.50	100.4
CLASS LABS					
Lab Contact Hours W	8,004.90	0.8	6,403.92	6,282.08	
Lab Contact Hours X	49,316.01	0.6	29,589.61	38,842.50	
Lab Contact Hours Y	3,890.60	0.5	1,945.30	1,961.72	
Lab Contact Hours Z	6,545.00	0.3	1,963.50	1,856.18	
Total Class Lab			39,902.33	48,942.48	122.7
RESEARCH					
Research Disciplines A	919.75	45.0	41,388.75	45,754.30	
Research Disciplines B	848.64	30.0	25,459.20	22,386.46	
Research Disciplines C	105.90	20.0	2,118.00	1,937.25	
Research Disciplines D	392.72	10.0	3,927.15	3,167.20	
Research Disciplines E	2,654.05	1.0	2,654.05	811.95	
Total Research			75,547.15	74,057.16	98.0
OFFICE - ACADEMIC					
Total FTE Faculty	2,147.77	13.0	27,921.01		
Faculty Supplement	322.17	13.0	4,188.15		
Total FTE Grads	5,344.54	4.0	21,378.16		
Total FTE Non-Acd Staff	668.11	13.0	8,685.43		
Office Service	62,172.75	0.3	18,651.83		
Total Academic Office			80,824.58	76,387.19	94.5
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	1,498.31	13.0	19,478.03		
Office Service	19,478.03	0.3	5,843.41		
Total Admin. Office			25,321.44	28,104.99	111.0
Total Office			106,146.02	104,492.18	98.4
LIBRARY					
10% of Total Eq. Volumes	760,808.70	0.004	3,043.23		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	6,247,278.30	0.005	31,236.39		
Total Stack	7,608,087.00		38,179.63	33,416.83	87.5
FTE UG - Excl. Prof.	22,182.56	0.5	11,091.28		
FTE UG - Professional	2,919.30	1.0	2,919.30		
FTE Grads	5,344.54	0.7	3,741.18		
Total Study	30,446.40		17,751.76	20,361.50	114.7
Library Support	55,931.38	0.25	13,982.85	20,994.52	150.1
Total Library			69,914.23	74,772.85	106.9
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	30,446.40	0.9	27,401.76		
Total P.E./Athletics			27,401.76	26,135.96	95.4
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	477,818.72	0.015	7,167.28	6,030.75	84.1
STUDENT AND CENTRAL SERVICES					
Total FTE Students	30,446.40	2.0	60,892.80	41,372.22	67.9
TOTAL FORMULA AREAS			423,507.24	412,474.10	97.4

Table 14

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

TORONTO (ERINDALE)	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	4,482.94	1.2	5,379.53	4,884.49	90.8
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	3,693.60	0.6	2,216.16	4,495.76	
Lab Contact Hours Y	1,059.50	0.5	529.75	860.31	
Lab Contact Hours Z	792.60	0.3	237.78	614.10	
Total Class Lab			2,983.69	5,970.17	200.1
RESEARCH					
Research Disciplines A	85.46	45.0	3,845.70	4,127.03	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	20.50	20.0	410.00	910.28	
Research Disciplines D	31.40	10.0	314.00	553.26	
Research Disciplines E	121.45	1.0	121.45	324.19	
Total Research			4,691.15	5,914.76	126.1
OFFICE - ACADEMIC					
Total FTE Faculty	205.29	13.0	2,668.77		
Faculty Supplement	30.79	13.0	400.32		
Total FTE Grads	104.00	4.0	416.00		
Total FTE Non-Acd Staff	49.00	13.0	637.00		
Office Service	4,122.09	0.3	1,236.63		
Total Academic Office			5,358.71	5,088.68	95.0
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	51.00	13.0	663.00		
Office Service	663.00	0.3	198.90		
Total Admin. Office			861.90	1,656.55	192.2
Total Office			6,220.61	6,745.23	108.4
LIBRARY					
10% of Total Eq. Volumes	29,681.90	0.004	118.73		
Next 300,000	267,137.10	0.007	1,869.96		
Next 300,000	0.00	0.006	0.00		
Remainder	0.00	0.005	0.00		
Total Stack	296,819.00		1,988.69	1,929.59	97.0
FTE UG - Excl. Prof.	4,378.94	0.5	2,189.47		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	104.00	0.7	72.80		
Total Study	4,482.94		2,262.27	1,148.17	50.8
Library Support	4,250.96	0.25	1,062.74	586.94	55.2
Total Library			5,313.70	3,664.70	69.0
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	4,482.94		1,000.00		
Total FTE Students	4,482.94	0.9	4,034.65		
Total P.E./Athletics			5,034.65	2,380.20	47.3
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	51,570.35	0.015	773.56	617.58	79.8
STUDENT AND CENTRAL SERVICES					
Total FTE Students	4,482.94	2.0	8,965.88	7,218.05	80.5
TOTAL FORMULA AREAS			39,362.76	37,395.18	95.0

Table 15

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

TORONTO (SCARBOROUGH)

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	3,838.76	1.2	4,606.51	3,042.00	66.0
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	4,848.50	0.6	2,909.10	4,676.21	
Lab Contact Hours Y	790.00	0.5	395.00	833.55	
Lab Contact Hours Z	227.00	0.3	68.10	415.88	
Total Class Lab			3,372.20	5,925.64	175.7
RESEARCH					
Research Disciplines A	62.58	45.0	2,815.88	2,397.62	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	18.18	20.0	363.50	734.45	
Research Disciplines D	25.69	10.0	256.90	940.90	
Research Disciplines E	124.79	1.0	124.79	86.31	
Total Research			3,561.07	4,159.28	116.8
OFFICE - ACADEMIC					
Total FTE Faculty	202.25	13.0	2,629.25		
Faculty Supplement	30.34	13.0	394.39		
Total FTE Grads	57.96	4.0	231.84		
Total FTE Non-Acd Staff	5.90	13.0	76.70		
Office Service	3,332.18	0.3	999.65		
Total Academic Office			4,331.83	3,381.41	78.1
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	97.60	13.0	1,268.80		
Office Service	1,268.80	0.3	380.64		
Total Admin. Office			1,649.44	1,934.08	117.3
Total Office			5,981.27	5,315.49	88.9
LIBRARY					
10% of Total Eq. Volumes	27,607.60	0.004	110.43		
Next 300,000	248,468.40	0.007	1,739.28		
Next 300,000	0.00	0.006	0.00		
Remainder	0.00	0.005	0.00		
Total Stack	276,076.00		1,849.71	1,327.87	71.8
FTE UG - Excl. Prof.	3,780.80	0.5	1,890.40		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	57.96	0.7	40.57		
Total Study	3,838.76		1,930.97	1,214.25	62.9
Library Support	3,780.68	0.25	945.17	659.31	69.8
Total Library			4,725.85	3,201.43	67.7
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	3,838.76		2,000.00		
4,000-8,000 Enrol.	0.00				
Total FTE Students	3,838.76	0.9	3,454.88		
Total P.E./Athletics			5,454.88	3,954.58	72.5
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	41,809.26	0.015	627.14	1,055.24	168.3
STUDENT AND CENTRAL SERVICES					
Total FTE Students	3,838.76	2.0	7,677.52	5,209.88	67.9
TOTAL FORMULA AREAS			36,006.44	31,863.54	88.5

Table 16

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

TRENT

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	4,016.00	1.2	4,819.20	4,398.00	91.3
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	2,484.50	0.6	1,490.70	2,227.00	
Lab Contact Hours Y	2,874.00	0.5	1,437.00	1,058.00	
Lab Contact Hours Z	656.00	0.3	196.80	71.00	
Total Class Lab			3,124.50	3,356.00	107.4
RESEARCH					
Research Disciplines A	22.40	45.0	1,008.00	1,838.00	
Research Disciplines B	1.50	30.0	45.00	0.00	
Research Disciplines C	14.40	20.0	288.00	482.00	
Research Disciplines D	54.80	10.0	548.00	294.00	
Research Disciplines E	164.35	1.0	164.35	0.00	
Total Research			2,053.35	2,614.00	127.3
OFFICE - ACADEMIC					
Total FTE Faculty	220.50	13.0	2,863.50		
Faculty Supplement	33.08	13.0	429.98		
Total FTE Grads	73.80	4.0	295.20		
Total FTE Non-Acd Staff	38.45	13.0	499.85		
Office Service	4,091.53	0.3	1,227.46		
Total Academic Office			5,318.98	4,568.00	85.9
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	116.02	13.0	1,508.26		
Office Service	1,508.26	0.3	452.48		
Total Admin. Office			1,960.74	3,243.00	165.4
Total Office			7,279.72	7,811.00	107.3
LIBRARY					
10% of Total Eq. Volumes	59,954.20	0.004	239.82		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	239,587.80	0.006	1,437.53		
Remainder	0.00	0.005	0.00		
Total Stack	599,542.00		3,777.34	2,721.00	72.0
FTE UG - Excl. Prof.	3,942.20	0.5	1,971.10		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	73.80	0.7	51.66		
Total Study	4,016.00		2,022.76	1,756.00	86.8
Library Support	5,800.10	0.25	1,450.03	955.00	65.9
Total Library			7,250.13	5,432.00	74.9
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	4,016.00		1,000.00		
Total FTE Students	4,016.00	0.9	3,614.40		
Total P.E./Athletics			4,614.40	3,475.00	75.3
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	53,451.00	0.015	801.77	453.00	56.5
STUDENT AND CENTRAL SERVICES					
Total FTE Students	4,016.00	2.0	8,032.00	7,358.00	91.6
TOTAL FORMULA AREAS			37,975.07	34,897.00	91.9

Table 17

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

WATERLOO	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	13,520.20	1.2	16,224.24	14,992.00	92.4
CLASS LABS					
Lab Contact Hours W	6,720.00	0.8	5,376.00	4,500.90	
Lab Contact Hours X	24,724.00	0.6	14,834.40	15,077.70	
Lab Contact Hours Y	4,192.00	0.5	2,096.00	2,603.90	
Lab Contact Hours Z	6,605.00	0.3	1,981.50	2,089.00	
Total Class Lab			24,287.90	24,271.50	99.9
RESEARCH					
Research Disciplines A	327.00	45.0	14,715.00	12,167.60	
Research Disciplines B	446.70	30.0	13,401.00	14,068.70	
Research Disciplines C	163.30	20.0	3,266.00	4,404.80	
Research Disciplines D	261.55	10.0	2,615.50	1,733.60	
Research Disciplines E	533.20	1.0	533.20	1,256.30	
Total Research			34,530.70	33,631.00	97.4
OFFICE - ACADEMIC					
Total FTE Faculty	846.20	13.0	11,000.60		
Faculty Supplement	126.93	13.0	1,650.09		
Total FTE Grads	1,640.10	4.0	6,560.40		
Total FTE Non-Acd Staff	653.00	13.0	8,489.00		
Office Service	27,700.09	0.3	8,310.03		
Total Academic Office			36,010.12	34,942.60	97.0
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	528.00	13.0	6,864.00		
Office Service	6,864.00	0.3	2,059.20		
Total Admin. Office			8,923.20	11,541.10	129.3
Total Office			44,933.32	46,483.70	103.5
LIBRARY					
10% of Total Eq. Volumes	155,776.40	0.004	623.11		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	801,987.60	0.005	4,009.94		
Total Stack	1,557,764.00		8,533.04	7,130.00	83.6
FTE UG - Excl. Prof.	11,637.70	0.5	5,818.85		
FTE UG - Professional	242.40	1.0	242.40		
FTE Grads	1,640.10	0.7	1,148.07		
Total Study	13,520.20		7,209.32	5,312.10	73.7
Library Support	15,742.36	0.25	3,935.59	3,508.80	89.2
Total Library			19,677.95	15,950.90	81.1
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	13,520.20	0.9	12,168.18		
Total P.E./Athletics			12,168.18	9,430.60	77.5
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	264,741.50	0.015	3,971.12	5,342.40	134.5
STUDENT AND CENTRAL SERVICES					
Total FTE Students	13,520.20	2.0	27,040.40	26,320.40	97.3
TOTAL FORMULA AREAS			182,833.81	176,422.50	96.5

Table 18

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

WESTERN	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	19,869.10	1.2	23,842.92	20,468.00	85.8
CLASS LABS					
Lab Contact Hours W	2,753.00	0.8	2,202.40	2,396.40	
Lab Contact Hours X	37,131.00	0.6	22,278.60	18,905.00	
Lab Contact Hours Y	8,759.00	0.5	4,379.50	5,752.40	
Lab Contact Hours Z	4,094.00	0.3	1,228.20	3,617.60	
Total Class Lab			30,088.70	30,671.40	101.9
RESEARCH					
Research Disciplines A	493.05	45.0	22,187.25	16,716.10	
Research Disciplines B	165.70	30.0	4,971.00	6,292.60	
Research Disciplines C	177.80	20.0	3,556.00	3,403.90	
Research Disciplines D	256.00	10.0	2,560.00	922.80	
Research Disciplines E	1,188.15	1.0	1,188.15	553.70	
Total Research			34,462.40	27,889.10	80.9
OFFICE - ACADEMIC					
Total FTE Faculty	1,167.70	13.0	15,180.10		
Faculty Supplement	175.16	13.0	2,277.02		
Total FTE Grads	2,191.50	4.0	8,766.00		
Total FTE Non-Acd Staff	975.00	13.0	12,675.00		
Office Service	38,898.12	0.3	11,669.43		
Total Academic Office			50,567.55	38,254.00	75.6
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	1,008.00	13.0	13,104.00		
Office Service	13,104.00	0.3	3,931.20		
Total Admin. Office			17,035.20	18,977.00	111.4
Total Office			67,602.75	57,231.00	84.7
LIBRARY					
10% of Total Eq. Volumes	335,909.10	0.004	1,343.64		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	2,423,181.90	0.005	12,115.91		
Total Stack	3,359,091.00		17,359.55	12,638.00	72.8
FTE UG - Excl. Prof.	15,814.60	0.5	7,907.30		
FTE UG - Professional	1,863.00	1.0	1,863.00		
FTE Grads	2,191.50	0.7	1,534.05		
Total Study	19,869.10		11,304.35	7,739.00	68.5
Library Support	28,663.90	0.25	7,165.97	5,302.00	74.0
Total Library			35,829.87	25,679.00	71.7
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	19,869.10	0.9	17,882.19		
Total P.E./Athletics			17,882.19	14,488.00	81.0
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	279,669.00	0.015	4,195.04	5,231.00	124.7
STUDENT AND CENTRAL SERVICES					
Total FTE Students	19,869.10	2.0	39,738.20	30,590.00	77.0
TOTAL FORMULA AREAS			253,642.06	212,247.50	83.7

Table 19

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

WILFRID LAURIER

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	6,006.52	1.2	7,207.82	6,064.00	84.1
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	3,114.00	0.6	1,868.40	2,455.00	
Lab Contact Hours Y	3,958.00	0.5	1,979.00	474.00	
Lab Contact Hours Z	2,281.00	0.3	684.30	80.00	
Total Class Lab			4,531.70	3,009.00	66.4
RESEARCH					
Research Disciplines A	21.50	45.0	967.50	480.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	38.25	20.0	765.00	290.00	
Research Disciplines D	52.50	10.0	525.00	146.00	
Research Disciplines E	415.15	1.0	415.15	113.00	
Total Research			2,672.65	1,029.00	38.5
OFFICE - ACADEMIC					
Total FTE Faculty	324.65	13.0	4,220.45		
Faculty Supplement	48.70	13.0	633.07		
Total FTE Grads	405.50	4.0	1,622.00		
Total FTE Non-Acd Staff	95.00	13.0	1,235.00		
Office Service	7,710.52	0.3	2,313.16		
Total Academic Office			10,023.67	5,304.00	52.9
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	310.00	13.0	4,030.00		
Office Service	4,030.00	0.3	1,209.00		
Total Admin. Office			5,239.00	4,490.00	85.7
Total Office			15,262.67	9,794.00	64.2
LIBRARY					
10% of Total Eq. Volumes	71,773.40	0.004	287.09		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	45,960.60	0.005	229.80		
Total Stack	717,734.00		4,416.90	3,631.00	82.2
FTE UG - Excl. Prof.	5,601.02	0.5	2,800.51		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	405.50	0.7	283.85		
Total Study	6,006.52		3,084.36	1,863.00	60.4
Library Support	7,501.26	0.25	1,875.31	1,155.00	61.6
Total Library			9,376.57	6,649.00	70.9
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	6,006.52		1,000.00		
Total FTE Students	6,006.52	0.9	5,405.87		
Total P.E./Athletics			6,405.87	4,373.00	68.3
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	56,772.00	0.015	851.58	883.00	103.7
STUDENT AND CENTRAL SERVICES					
Total FTE Students	6,006.52	2.0	12,013.04	9,006.00	75.0
TOTAL FORMULA AREAS			58,321.91	40,807.00	70.0

Table 20

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

WINDSOR	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	10,753.99	1.2	12,904.79	9,336.90	72.4
CLASS LABS					
Lab Contact Hours W	1,100.00	0.8	880.00	2,714.32	
Lab Contact Hours X	3,545.00	0.6	2,127.00	5,402.61	
Lab Contact Hours Y	2,201.00	0.5	1,100.50	2,709.36	
Lab Contact Hours Z	6,394.00	0.3	1,918.20	5,008.82	
Total Class Lab			6,025.70	15,835.11	262.8
RESEARCH					
Research Disciplines A	110.15	45.0	4,956.75	5,964.21	
Research Disciplines B	98.20	30.0	2,946.00	2,225.21	
Research Disciplines C	60.30	20.0	1,206.00	643.33	
Research Disciplines D	95.95	10.0	959.50	296.74	
Research Disciplines E	516.80	1.0	516.80	453.80	
Total Research			10,585.05	9,583.29	90.5
OFFICE - ACADEMIC					
Total FTE Faculty	524.00	13.0	6,812.00		
Faculty Supplement	78.60	13.0	1,021.80		
Total FTE Grads	713.20	4.0	2,852.80		
Total FTE Non-Acd Staff	378.00	13.0	4,914.00		
Office Service	15,600.60	0.3	4,680.18		
Total Academic Office			20,280.78	15,003.88	74.0
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	223.00	13.0	2,899.00		
Office Service	2,899.00	0.3	869.70		
Total Admin Office			3,768.70	6,548.70	173.8
Total Office			24,049.48	21,552.58	89.6
LIBRARY					
10% of Total Eq. Volumes	206,615.60	0.004	826.46		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	1,259,540.40	0.005	6,297.70		
Total Stack	2,066,156.00		11,024.16	6,795.92	61.6
FTE UG - Excl. Prof.	9,112.49	0.5	4,556.25		
FTE UG - Professional	928.30	1.0	928.30		
FTE Grads	713.20	0.7	499.24		
Total Study	10,753.99		5,983.79	5,327.35	89.0
Library Support	17,007.95	0.25	4,251.99	2,992.46	70.4
Total Library			21,259.94	15,115.73	71.1
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	10,753.99	0.9	9,678.59		
Total P.E./Athletics			9,678.59	9,930.86	102.6
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	126,982.21	0.015	1,904.73	2,005.77	105.3
STUDENT AND CENTRAL SERVICES					
Total FTE Students	10,753.99	2.0	21,507.98	13,943.85	64.8
TOTAL FORMULA AREAS			107,916.26	97,304.09	90.2

Table 21

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

YORK (MAIN)

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	23,267.00	1.2	27,920.40	18,884.50	67.6
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	26,970.50	0.6	16,182.30	11,692.40	
Lab Contact Hours Y	12,976.00	0.5	6,488.00	1,399.10	
Lab Contact Hours Z	5,491.00	0.3	1,647.30	1,543.00	
Total Class Lab			24,317.60	14,634.50	60.2
RESEARCH					
Research Disciplines A	231.10	45.0	10,399.50	8,036.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	236.60	20.0	4,732.00	2,110.70	
Research Disciplines D	285.00	10.0	2,850.00	307.50	
Research Disciplines E	1,760.80	1.0	1,760.80	1,055.40	
Total Research			19,762.30	11,509.60	58.2
OFFICE - ACADEMIC					
Total FTE Faculty	1,331.80	13.0	17,313.40		
Faculty Supplement	199.77	13.0	2,597.01		
Total FTE Grads	2,283.00	4.0	9,132.00		
Total FTE Non-Acd Staff	339.00	13.0	4,407.00		
Office Service	33,449.41	0.3	10,034.82		
Total Academic Office			43,484.23	30,129.60	69.3
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	1,168.00	13.0	15,184.00		
Office Service	15,184.00	0.3	4,555.20		
Total Admin. Office			19,739.20	18,993.50	96.2
Total Office			63,223.43	49,123.10	77.7
LIBRARY					
10% of Total Eq. Volumes	189,337.80	0.004	757.35		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	1,104,040.20	0.005	5,520.20		
Total Stack	1,893,378.00		10,177.55	9,524.90	93.6
FTE UG - Excl. Prof.	17,878.00	0.5	8,939.00		
FTE UG - Professional	3,106.00	1.0	3,106.00		
FTE Grads	2,283.00	0.7	1,598.10		
Total Study	23,267.00		13,643.10	5,070.90	37.2
Library Support	23,820.65	0.25	5,955.16	5,149.80	86.5
Total Library			29,775.82	19,745.60	66.3
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	23,267.00	0.9	20,940.30		
Total P.E./Athletics*			20,940.30	7,473.30	35.7
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	216,942.00	0.015	3,254.13	1,828.10	56.2
STUDENT AND CENTRAL SERVICES					
Total FTE Students	23,267.00	2.0	46,534.00	26,447.30	56.8
TOTAL FORMULA AREAS			235,727.98	149,646.00	63.5

* The inventory figure does not include National Tennis Centre or Track and Field Centre.

Table 22

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

YORK (GLENDON)	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	1,406.00	1.2	1,687.20	1,812.50	107.4
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	115.50	0.6	69.30	289.00	
Lab Contact Hours Y	0.00	0.5	0.00	74.00	
Lab Contact Hours Z	954.00	0.3	286.20	718.40	
Total Class Lab			355.50	1,081.40	304.2
RESEARCH					
Research Disciplines A	0.00	45.0	0.00	0.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	10.20	20.0	204.00	107.10	
Research Disciplines D	1.00	10.0	10.00	0.00	
Research Disciplines E	131.20	1.0	131.20	36.10	
Total Research			345.20	143.20	41.5
OFFICE - ACADEMIC					
Total FTE Faculty	141.90	13.0	1,844.70		
Faculty Supplement	21.29	13.0	276.71		
Total FTE Grads	0.00	4.0	0.00		
Total FTE Non-Acd Staff	22.00	13.0	286.00		
Office Service	2,407.41	0.3	722.22		
Total Academic Office			3,129.63	2,431.90	77.7
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	16.00	13.0	208.00		
Office Service	208.00	0.3	62.40		
Total Admin. Office			270.40	1,165.00	430.8
Total Office			3,400.03	3,596.90	105.8
LIBRARY					
10% of Total Eq. Volumes	26,405.00	0.004	105.62		
Next 300,000	237,645.00	0.007	1,663.52		
Next 300,000	0.00	0.006	0.00		
Remainder	0.00	0.005	0.00		
Total Stack	264,050.00		1,769.14	870.10	49.2
FTE UG - Excl. Prof.	1,406.00	0.5	703.00		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	0.00	0.7	0.00		
Total Study	1,406.00		703.00	583.60	83.0
Library Support	2,472.14	0.25	618.03	293.40	47.5
Total Library			3,090.17	1,747.10	56.5
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	1,406.00		2,000.00		
4,000-8,000 Enrol.	0.00				
Total FTE Students	1,406.00	0.9	1,265.40		
Total P.E./Athletics			3,265.40	3,133.30	96.0
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	22,283.00	0.015	334.25	397.60	119.0
STUDENT AND CENTRAL SERVICES					
Total FTE Students	1,406.00	2.0	2,812.00	2,935.20	104.4
TOTAL FORMULA AREAS			15,289.74	14,847.20	97.1

Table 23

GENERATED CLASSROOM SPACE PER FTE STUDENT, 1989-90

	INPUT MEASURE	SPACE FACTOR	SPACE GENERATED	INVENTORY	% I/G
Brock	6,339.9	1.2	7,608	4,665	61.3
Carleton	14,650.9	1.2	17,581	12,704	72.3
Guelph	11,685.8	1.2	14,023	11,927	85.1
Lakehead	4,328.6	1.2	5,194	4,903	94.4
Laurentian	4,550.7	1.2	5,461	5,524	101.2
McMaster	13,476.7	1.2	16,172	13,457	83.2
Ottawa	16,950.4	1.2	20,340	17,041	83.8
Queen's	13,933.0	1.2	16,720	16,177	96.8
Ryerson	11,660.8	1.2	13,993	11,617	83.0
Toronto - St. George	30,446.4	1.2	36,536	36,671	100.4
Toronto - Erindale	4,482.9	1.2	5,380	4,884	90.8
Toronto - Scarborough	3,838.8	1.2	4,607	3,042	66.0
Trent	4,016.0	1.2	4,819	4,398	91.3
Waterloo	13,520.2	1.2	16,224	14,992	92.4
Western	19,869.1	1.2	23,843	20,468	85.8
Wilfrid Laurier	6,006.5	1.2	7,208	6,064	84.1
Windsor	10,754.0	1.2	12,905	9,337	72.4
York - Main Campus	23,267.0	1.2	27,920	18,885	67.6
York - Glendon	1,406.0	1.2	1,687	1,813	107.4
Total	215,183.7	1.2	258,220	218,568	84.6

Input Measure: Total FTE Students, as defined in 1.0 of Appendix C.

Space Factor: 1.2 square metres per FTE Student.

Table 24

GENERATED CLASS LAB SPACE PER WEIGHTED AVERAGE LAB CONTACT HOUR, 1989-90

	INPUT MEASURE	SPACE/ INPUT	SPACE GENERATED	INVENTORY	% I/G
Brock	12,863.0	0.5	6,705	5,181	77.3
Carleton	25,931.5	0.6	15,679	16,427	104.8
Guelph	60,811.5	0.6	38,818	23,076	59.4
Lakehead	16,479.5	0.5	8,727	10,932	125.3
Laurentian	8,999.0	0.6	5,120	5,827	113.8
McMaster	38,014.0	0.6	21,532	16,589	77.0
Ottawa	36,891.2	0.5	18,876	18,254	96.7
Queen's	48,997.0	0.6	29,216	28,076	96.1
Ryerson	74,862.8	0.5	40,844	30,416	74.5
Toronto - St. George	67,756.5	0.6	39,902	48,942	122.7
Toronto - Erindale	5,545.7	0.5	2,984	5,970	200.1
Toronto - Scarborough	5,865.5	0.6	3,372	5,926	175.7
Trent	6,014.5	0.5	3,125	3,356	107.4
Waterloo	42,241.0	0.6	24,288	24,272	99.9
Western	52,737.0	0.6	30,089	30,671	101.9
Wilfrid Laurier	9,353.0	0.5	4,532	3,009	66.4
Windsor	13,240.0	0.5	6,026	15,835	262.8
York - Main Campus	45,437.5	0.5	24,318	14,635	60.2
York - Glendon	1,069.5	0.3	356	1,081	304.2
Total	573,109.7	0.6	324,505	308,474	95.1

Input Measure: Total laboratory weekly student contact hours for programmes in Groups W, X, Y, Z as defined in Appendix A, "Programme Classification Scheme".

Space Per Input: A weighted average of class lab factors for Groups W, X, Y, Z (Total Class Lab Space Generated divided by Total Contact hours).

Table 25

GENERATED CLASS LAB SPACE PER FTE STUDENT, 1989-90

	INPUT MEASURE	SPACE/ STUDENT	SPACE GENERATED	INVENTORY	% I/G
Brock	6,339.9	1.1	6,705	5,181	77.3
Carleton	14,650.9	1.1	15,679	16,427	104.8
Guelph	11,685.8	3.3	38,818	23,076	59.4
Lakehead	4,328.6	2.0	8,727	10,932	125.3
Laurentian	4,550.7	1.1	5,120	5,827	113.8
McMaster	13,476.7	1.6	21,532	16,589	77.0
Ottawa	16,950.4	1.1	18,876	18,254	96.7
Queen's	13,933.0	2.1	29,216	28,076	96.1
Ryerson	11,660.8	3.5	40,844	30,416	74.5
Toronto - St. George	30,446.4	1.3	39,902	48,942	122.7
Toronto - Erindale	4,482.9	0.7	2,984	5,970	200.1
Toronto - Scarborough	3,838.8	0.9	3,372	5,926	175.7
Trent	4,016.0	0.8	3,125	3,356	107.4
Waterloo	13,520.2	1.8	24,288	24,272	99.9
Western	19,869.1	1.5	30,089	30,671	101.9
Wilfrid Laurier	6,006.5	0.8	4,532	3,009	66.4
Windsor	10,754.0	0.6	6,026	15,835	262.8
York - Main Campus	23,267.0	1.0	24,318	14,635	60.2
York - Glendon	1,406.0	0.3	356	1,081	304.2
Total	215,183.7	1.5	324,505	308,474	95.1

Input Measure: Total FTE Students.

Space Per Student: Total Generated Class Lab Space divided by Total FTE Students.

Table 26

GENERATED RESEARCH SPACE PER WEIGHTED AVERAGE FTE FACULTY, .50 FTE GRADUATE STUDENTS AND .50 OTHER RESEARCH APPOINTMENTS, 1989-90

	INPUT MEASURE	SPACE/ INPUT	SPACE GENERATED	INVENTORY	% I/G
Brock	535.6	8.8	4,739	4,432	93.5
Carleton	1,494.4	11.2	16,751	8,655	51.7
Guelph	1,510.1	26.3	39,768	41,708	104.9
Lakehead	350.2	16.7	5,863	3,342	57.0
Laurentian	341.2	14.2	4,857	2,620	53.9
McMaster	1,818.4	20.0	36,402	34,999	96.1
Ottawa	2,066.3	12.0	24,768	19,389	78.3
Queen's	1,925.3	16.4	31,489	26,982	85.7
Ryerson*	-	-	-	-	-
Toronto - St. George	4,921.1	15.4	75,547	74,057	98.0
Toronto - Erindale	258.8	18.1	4,691	5,915	126.1
Toronto - Scarborough	231.2	15.4	3,561	4,159	116.8
Trent	257.5	8.0	2,053	2,614	127.3
Waterloo	1,731.8	19.9	34,531	33,631	97.4
Western	2,280.7	15.1	34,462	27,889	80.9
Wilfrid Laurier	527.4	5.1	2,673	1,029	38.5
Windsor	881.4	12.0	10,585	9,583	90.5
York - Main Campus	2,533.5	7.8	19,762	11,510	58.2
York - Glendon	142.4	2.4	345	143	41.5
Total	23,807.1	14.8	352,848	312,657	88.6

Input Measure: The total of FTE Faculty plus one-half Graduate Student plus one-half Other Research Appointments in programmes A, B, C, D, E (Appendix A, "Programme Classification Scheme").

Space Per Input: A weighted average of space factors for programmes A, B, C, D, E (Total Research Space Generated divided by Total Faculty and one-half Graduate Student and one-half Other Research Appointments).

* Category not applicable.

Table 27

TOTAL GENERATED ACADEMIC OFFICE SPACE (4.0) PER FTE FACULTY, 1989-90

	FTE FACULTY	SPACE/ FACULTY	SPACE GENERATED	INVENTORY*	% I/G
Brock	384.4	26.8	10,283	6,448	62.7
Carleton	656.8	38.5	25,311	22,082	87.2
Guelph	856.5	40.1	34,379	24,675	71.8
Lakehead	295.8	28.5	8,431	5,814	69.0
Laurentian	291.6	26.5	7,739	5,412	69.9
McMaster	879.8	38.2	33,580	26,486	78.9
Ottawa	1,011.5	38.2	38,656	31,167	80.6
Queen's	836.0	38.6	32,261	33,775	104.7
Ryerson	679.7	24.2	16,442	10,852	66.0
Toronto - St. George	2,147.8	37.6	80,825	76,387	94.5
Toronto - Erindale	205.3	26.1	5,359	5,089	95.0
Toronto - Scarborough	202.3	21.4	4,332	3,381	78.1
Trent	220.5	24.1	5,319	4,568	85.9
Waterloo	846.2	42.6	36,010	34,943	97.0
Western	1,167.7	43.3	50,568	38,254	75.6
Wilfrid Laurier	324.7	30.9	10,024	5,304	52.9
Windsor	524.0	38.7	20,281	15,004	74.0
York - Main Campus	1,331.8	32.7	43,484	30,130	69.3
York - Glendon	141.9	22.1	3,130	2,432	77.7
Total	13,004.1	35.9	466,412	382,202	81.9

Input Measure: Total FTE Faculty.

Space per Faculty: Total Generated Space for Faculty (plus 15%), Graduate Students and non-academic staff (including service space) divided by total FTE Faculty.

* Includes subcategories 4.1, 4.2, 4.3, 4.4 and 4.5

Table 28

TOTAL GENERATED ADMINISTRATIVE OFFICE SPACE (10.0)
PER NON-ACADEMIC STAFF IN ADMINISTRATIVE DEPARTMENTS, 1989-90

	INPUT MEASURE	SPACE/ STAFF	SPACE GENERATED	INVENTORY*	% I/G
Brock	299.0	16.9	5,053	2,534	50.1
Carleton	621.8	16.9	10,508	8,417	80.1
Guelph	706.0	16.9	11,931	17,062	143.0
Lakehead	229.0	16.9	3,870	3,199	82.7
Laurentian	240.5	16.9	4,064	2,661	65.5
McMaster	681.6	16.9	11,519	12,721	110.4
Ottawa	750.8	16.9	12,689	17,144	135.1
Queen's	563.0	16.9	9,515	11,395	119.8
Ryerson	505.9	16.9	8,549	8,267	96.7
Toronto - St. George	1,498.3	16.9	25,321	28,105	111.0
Toronto - Erindale	51.0	16.9	862	1,657	192.2
Toronto - Scarborough	97.6	16.9	1,649	1,934	117.3
Trent	116.0	16.9	1,961	3,243	165.4
Waterloo	528.0	16.9	8,923	11,541	129.3
Western	1,008.0	16.9	17,035	18,977	111.4
Wilfrid Laurier	310.0	16.9	5,239	4,490	85.7
Windsor	223.0	16.9	3,769	6,549	173.8
York - Main Campus	1,168.0	16.9	19,739	18,994	96.2
York - Glendon	16.0	16.9	270	1,165	430.8
Total	9,613.4	16.9	162,467	180,054	110.8

Input Measure: Total Non-Academic Office Staff in administrative departments.

Space per Staff: Total Generated Space for Non-Academic Office Staff (including service space) divided by Non-Academic Staff.

* Includes subcategories 10.1 and 10.2 (meeting rooms, etc.)

Table 29

GENERATED LIBRARY SPACE PER FTE STUDENT, 1989-90

	INPUT MEASURE	SPACE FACTOR	SPACE GENERATED	INVENTORY	% I/G
Brock	6,339.9	1.6	10,096	4,715	46.7
Carleton	14,650.9	1.5	21,427	10,810	50.5
Guelph	11,685.8	2.2	25,885	12,500	48.3
Lakehead	4,328.6	1.9	8,309	5,193	62.5
Laurentian	4,550.7	2.1	9,603	6,231	64.9
McMaster	13,476.7	1.8	24,356	20,668	84.9
Ottawa	16,950.4	1.7	28,780	17,491	60.8
Queen's	13,933.0	1.9	26,497	22,149	83.6
Ryerson	11,660.8	1.0	11,834	8,864	74.9
Toronto - St. George	30,446.4	2.3	69,914	74,773	106.9
Toronto - Erindale	4,482.9	1.2	5,314	3,665	69.0
Toronto - Scarborough	3,838.8	1.2	4,726	3,201	67.7
Trent	4,016.0	1.8	7,250	5,432	74.9
Waterloo	13,520.2	1.5	19,678	15,951	81.1
Western	19,869.1	1.8	35,830	25,679	71.7
Wilfrid Laurier	6,006.5	1.6	9,377	6,649	70.9
Windsor	10,754.0	2.0	21,260	15,116	71.1
York - Main Campus	23,267.0	1.3	29,776	19,746	66.3
York - Glendon	1,406.0	2.2	3,090	1,747	56.5
Total	215,183.7	1.7	373,000	280,579	75.2

Input Measure: Total FTE Students.

Space Factor: Total Library Space Generated (stack space for total volumes, study space for FTE undergraduates, professional undergraduates and graduates, and service space for that number of volumes and students), divided by Total FTE Students.

Table 30

GENERATED PHYSICAL EDUCATION/ATHLETICS SPACE PER FTE STUDENT, 1989-90

	INPUT MEASURE	SPACE/ STUDENT	SPACE GENERATED	INVENTORY	% I/G
Brock	6,339.9	1.1	6,706	6,944	103.5
Carleton	14,650.9	0.9	13,186	8,192	62.1
Guelph	11,685.8	0.9	10,517	11,661	110.9
Lakehead	4,328.6	1.1	4,896	5,559	113.5
Laurentian	4,550.7	1.1	5,098	6,481	127.2
McMaster	13,476.7	0.9	12,129	7,565	62.4
Ottawa	16,950.4	0.9	15,255	8,419	55.2
Queen's	13,933.0	0.9	12,540	12,850	102.5
Ryerson	11,660.8	0.9	10,495	6,435	61.3
Toronto - St. George	30,446.4	0.9	27,402	26,136	95.4
Toronto - Erindale	4,482.9	1.1	5,035	2,380	47.3
Toronto - Scarborough	3,838.8	1.4	5,455	3,955	72.5
Trent	4,016.0	1.1	4,614	3,475	75.3
Waterloo	13,520.2	0.9	12,168	9,431	77.5
Western	19,869.1	0.9	17,882	14,488	81.0
Wilfrid Laurier	6,006.5	1.1	6,406	4,373	68.3
Windsor	10,754.0	0.9	9,679	9,931	102.6
York - Main Campus *	23,267.0	0.9	20,940	7,473	35.7
York - Glendon	1,406.0	2.3	3,265	3,133	96.0
Total	215,183.7	0.9	203,665	158,880	78.0

Input Measure: Total FTE Students.

Space per Student: Total Physical Education/Athletics Space Generated divided by Total FTE Students.

* The inventory figure does not include National Tennis Centre or Track and Field Centre.

Table 31

MAINTENANCE SPACE, 1989-90

	INPUT MEASURE	SPACE FACTOR	SPACE GENERATED	INVENTORY	% I/G
Brock	59,630.0	0.015	894	1,252	140.0
Carleton	127,781.5	0.015	1,917	1,733	90.4
Guelph	256,623.4	0.015	3,849	5,175	134.4
Lakehead	63,818.6	0.015	957	1,315	137.4
Laurentian	65,761.0	0.015	986	655	66.4
McMaster	250,616.5	0.015	3,759	3,620	96.3
Ottawa	192,228.1	0.015	2,883	1,069	37.1
Queen's	279,245.0	0.015	4,189	3,742	89.3
Ryerson	102,351.1	0.015	1,535	2,428	158.1
Toronto - St. George	477,818.7	0.015	7,167	6,031	84.1
Toronto - Erindale	51,570.4	0.015	774	618	79.8
Toronto - Scarborough	41,809.3	0.015	627	1,055	168.3
Trent	53,451.0	0.015	802	453	56.5
Waterloo	264,741.5	0.015	3,971	5,342	134.5
Western	279,669.0	0.015	4,195	5,231	124.7
Wilfrid Laurier	56,772.0	0.015	852	883	103.7
Windsor	126,982.2	0.015	1,905	2,006	105.3
York - Main Campus	216,942.0	0.015	3,254	1,828	56.2
York - Glendon	22,283.0	0.015	334	398	119.0
Total	2,990,094.3	0.015	44,851	44,833	100.0

Input Measure: Total NASM Inventory (excluding 16.0).

Space Factor: Based on the average ratio of Maintenance Space to Total Inventory at the Ontario Universities.

Table 32

STUDENT AND CENTRAL SERVICES SPACE GENERATED PER FTE STUDENT, 1989-90

	INPUT MEASURE	SPACE FACTOR	SPACE GENERATED	INVENTORY	% I/G
Brock	6,339.9	2.0	12,680	7,512	59.2
Carleton	14,650.9	2.0	29,302	17,102	58.4
Guelph	11,685.8	2.0	23,372	20,797	89.0
Lakehead	4,328.6	2.0	8,657	8,413	97.2
Laurentian	4,550.7	2.0	9,101	6,952	76.4
McMaster	13,476.7	2.0	26,953	20,475	76.0
Ottawa	16,950.4	2.0	33,901	18,084	53.3
Queen's	13,933.0	2.0	27,866	27,513	98.7
Ryerson	11,660.8	2.0	23,322	17,977	77.1
Toronto - St. George	30,446.4	2.0	60,893	41,372	67.9
Toronto - Erindale	4,482.9	2.0	8,966	7,218	80.5
Toronto - Scarborough	3,838.8	2.0	7,678	5,210	67.9
Trent	4,016.0	2.0	8,032	7,358	91.6
Waterloo	13,520.2	2.0	27,040	26,320	97.3
Western	19,869.1	2.0	39,738	30,590	77.0
Wilfrid Laurier	6,006.5	2.0	12,013	9,006	75.0
Windsor	10,754.0	2.0	21,508	13,944	64.8
York - Main Campus	23,267.0	2.0	46,534	26,447	56.8
York - Glendon	1,406.0	2.0	2,812	2,935	104.4
Total	215,183.7	2.0	430,367	315,227	73.2

Input Measure: Total FTE Students.

Space Factor: A rounded total of recommended space factor ranges for the individual student and central services categories.

Table 33

TOTAL GENERATED SPACE PER FTE STUDENT, 1989-90

	FTE STUDENT	SPACE GENERATED	GENERATED PER FTE	INVENTORY	INVENTORY PER FTE	% I/G
Brock	6,339.9	64,763.2	10.2	43,683	6.9	67.5
Carleton	14,650.9	151,661.4	10.4	106,122	7.2	70.0
Guelph	11,685.8	202,542.5	17.3	168,580	14.4	83.2
Lakehead	4,328.6	54,904.4	12.7	48,669	11.2	88.6
Laurentian	4,550.7	52,027.3	11.4	42,363	9.3	81.4
McMaster	13,476.7	186,402.2	13.8	156,579	11.6	84.0
Ottawa	16,950.4	196,148.5	11.6	148,058	8.7	75.5
Queen's	13,933.0	190,291.1	13.7	182,659	13.1	96.0
Ryerson	11,660.8	127,013.7	10.9	96,856	8.3	76.3
Toronto - St. George	30,446.4	423,507.2	13.9	412,474	13.5	97.4
Toronto - Erindale	4,482.9	39,362.8	8.8	37,395	8.3	95.0
Toronto - Scarborough	3,838.8	36,006.4	9.4	31,864	8.3	88.5
Trent	4,016.0	37,975.1	9.5	34,897	8.7	91.9
Waterloo	13,520.2	182,833.8	13.5	176,423	13.0	96.5
Western	19,869.1	253,642.1	12.8	212,248	10.7	83.7
Wilfrid Laurier	6,006.5	58,321.9	9.7	40,807	6.8	70.0
Windsor	10,754.0	107,916.3	10.0	97,304	9.0	90.2
York - Main Campus	23,257.0	235,728.0	10.1	149,646	6.4	63.5
York - Glendon	1,406.0	15,289.7	10.9	14,847	10.6	97.1
Total	215,183.7	2,616,337.6	12.2	2,201,474	10.2	84.1

A comparison of the Total Generated Space and existing Inventory in categories 1 through 15 per FTE Student.

Table A1

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

NIPISSING	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	1,097.00	1.2	1,316.40	697.00	52.9
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	83.00	0.6	49.80	10.60	
Lab Contact Hours Y	153.00	0.5	76.50	8.50	
Lab Contact Hours Z	48.00	0.3	14.40	4.20	
Total Class Lab			140.70	23.30	16.6
RESEARCH					
Research Disciplines A	6.00	45.0	270.00	0.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	5.00	20.0	100.00	0.00	
Research Disciplines D	8.00	10.0	80.00	0.00	
Research Disciplines E	70.00	1.0	70.00	0.00	
Total Research			520.00	0.00	0.0
OFFICE - ACADEMIC					
Total FTE Faculty	89.00	13.0	1,157.00		
Faculty Supplement	13.35	13.0	173.55		
Total FTE Grads	0.00	4.0	0.00		
Total FTE Non-Acd Staff	8.00	13.0	104.00		
Office Service	1,434.55	0.3	430.37		
Total Academic Office			1,864.92	909.00	48.7
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	37.00	13.0	481.00		
Office Service	481.00	0.3	144.30		
Total Admin. Office			625.30	353.00	56.5
Total Office			2,490.22	1,262.00	50.7
LIBRARY					
10% of Total Eq. Volumes	9,000.00	0.004	36.00		
Next 300,000	81,000.00	0.007	567.00		
Next 300,000	0.00	0.006	0.00		
Remainder	0.00	0.005	0.00		
Total Stack	90,000.00		603.00	649.00 *	
FTE UG - Excl. Prof.	1,097.00	0.5	548.50		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	0.00	0.7	0.00		
Total Study	1,097.00		548.50		
Library Support	1,151.50	0.25	287.88		
Total Library			1,439.38	649.00	45.1
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	1,097.00		2,000.00		
4,000-8,000 Enrol.	0.00				
Total FTE Students	1,097.00	0.9	987.30		
Total P.E./Athletics			2,987.30	225.50	7.5
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	5,019.00	0.015	75.29	0.00	0.0
STUDENT AND CENTRAL SERVICES					
Total FTE Students	1,097.00	2.0	2,194.00	299.00	13.6
TOTAL FORMULA AREAS			11,163.28	3,155.80	28.3

* Includes both Stack and Study Space.

Table A2

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1989-90

HEARST	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	131.28	1.2	157.54	414.79	263.3
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	0.00	0.6	0.00	0.00	
Lab Contact Hours Y	0.00	0.5	0.00	0.00	
Lab Contact Hours Z	9.00	0.3	2.70	0.00	
Total Class Lab			2.70	0.00	0.0
RESEARCH					
Research Disciplines A	0.00	45.0	0.00	0.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	3.00	20.0	60.00	0.00	
Research Disciplines D	1.00	10.0	10.00	0.00	
Research Disciplines E	17.00	1.0	17.00	0.00	
Total Research			87.00	0.00	0.0
OFFICE - ACADEMIC					
Total FTE Faculty	21.00	13.0	273.00		
Faculty Supplement	3.15	13.0	40.95		
Total FTE Grads	0.00	4.0	0.00		
Total FTE Non-Acd Staff	0.00	13.0	0.00		
Office Service	313.95	0.3	94.19		
Total Academic Office			408.14	230.71	56.5
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	14.00	13.0	182.00		
Office Service	182.00	0.3	54.60		
Total Admin. Office			236.60	257.35	108.8
Total Office			644.74	488.06	75.7
LIBRARY					
10% of Total Eq. Volumes	3,206.63	0.004	12.83		
Next 300,000	28,859.63	0.007	202.02		
Next 300,000	0.00	0.006	0.00		
Remainder	0.00	0.005	0.00		
Total Stack	32,066.25		214.84	217.48	101.2
FTE UG - Excl. Prof.	131.28	0.5	65.64		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	0.00	0.7	0.00		
Total Study	131.28		65.64	43.20	65.8
Library Support	280.48	0.25	70.12	49.32	70.3
Total Library			350.60	310.00	88.4
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	131.28		2,000.00		
4,000-8,000 Enrol.	0.00				
Total FTE Students	131.28	0.9	118.15		
Total P.E./Athletics			2,118.15	604.25	28.5
MAINTENANCE SHOPS					
Total NASM Inv. (exc. 16.0)	5,771.43	0.015	86.57	224.27	259.1
STUDENT AND CENTRAL SERVICES					
Total FTE Students	131.28	2.0	262.56	650.97	247.9
TOTAL FORMULA AREAS			3,709.86	2,692.34	72.6

Appendix A

Programme Classification Scheme

COU space standards make use of programme or discipline groups in the generation of class labs, research and library space. The programme groups were developed originally from those listed in Appendix D of Volume I of Building Blocks. The programmes have been classified at the "second level" of detail as listed in that publication and it may be taken that these second levels are inclusive of the detailed programme names listed at the "third level".

The list of professional programmes used in the generation of library facilities are those of the operating grants formula.

Programme Related Space Factors

Programme/Discipline	Class Lab Factor	Group	Research Factor	Group	Professional Programme
EDUCATION					
Physical and Health Education, Recreation	0.5	Y	10	D	
Kinetics, Kinesiology	0.5	Y	20	C	
Other Education	0.5	Y	1	E	Yes (except 4 year concurrent)
FINE & APPLIED ARTS					
Theory, Ceramics, Drama, Theatre, Engraving, Industrial Design, Interior Design, Lithography, Music, Painting, Art, Printing, Sculpture	0.6	X	1	E	

Programme/Discipline	Class Lab Factor	Group	Research Factor	Group	Professional Programme
HUMANITIES & RELATED					
Classics, Classical and Dead Languages, Creative Writing, History, Mass Media Studies, Modern and Medieval Languages and Literature, Philosophy, Religious Studies, Translation and Interpretation	0.3	Z	1	E	
Library and Records Science	0.3	Z	10	D	Yes
SOCIAL SCIENCES & RELATED					
Anthropology, Archaeology, Geography, Man/Environment Studies	0.5	Y	10	D	
Area Studies, Commerce, Business Administration, Economics, Agricultural Economics, Political Science, Sociology, Military Studies, Linguistics	0.3	Z	1	E	
Law, Social Work	0.3	Z	1	E	Yes
Psychology	0.5	Y	20	C	
AGRICULTURE & BIOLOGICAL SCIENCE					
Agriculture (excluding Agricultural Economics)	0.8	W	45	A	
Biochemistry, Biology, Biophysics, Human Biology, Microbiology, Physiology, Botany, Zoology	0.6	X	45	A	
Household Science & Related (excluding Human Biology)	0.5	Y	10	D	
Veterinary Medicine and Sciences	0.8	W	45	A	Yes
ENGINEERING & APPLIED SCIENCES					
Architecture, Landscape Architecture	0.6	X	1	E	
Engineering (excluding Electrical Engineering)	0.8	W	30	B	
Electrical Engineering, Engineering Science	0.6	X	30	B	
Forestry	0.6	X	30	B	

Programme/Discipline	Class Lab Factor	Group	Research Factor	Group	Professional Programme
HEALTH PROFESSIONS AND OCCUPATIONS					
Medicine	0.6	X	45	A	Yes
Dentistry, Optometry	0.6	X	30	A	Yes
Dental Hygiene, Medical Technology, Pharmacy, Public Health	0.6	X	30	B	
Nursing	0.3	Z	1	E	
Rehabilitation Medicine, Art as Applied to Medicine	0.6	X	20	C	
Clinical Science Departments*	0		0		
MATHEMATICS AND PHYSICAL SCIENCES					
Actuarial Science, Applied Mathematics (except Computer Science), Mathematical Statistics, Mathematics	0.3	Z	1	E	
Computer Science	0.3	Z	10	D	
Astronomy, Chemistry, Geology and related, Meteorology, Oceanology Physics	0.6	X	45	A	
Metallurgy and Materials Science	0.8	W	30	B	

* *Do not report corresponding inventory. See Category 20.*

Appendix B

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Appendix B

SPACE CLASSIFICATION SCHEME

Section 1 - Notes

The space classification scheme is presented in three sections. This section defines the nature and scope of the inventory that is to be included in the reporting and addresses several recurring questions concerning space inventory and classification.

Categories

Section 2 is the classification scheme itself. It includes 20 categories of space type which are accompanied by definitions aimed at the main intent of the classification. The first 15 of these categories identify the more usual kinds of usable or assignable spaces in an institution for which space standards could normally be developed, while categories 16 through 20 classify non-formula spaces or highly specialized facilities generally of a unique nature. The definitions of the space types are meant to be mutually exclusive.

Subcategories

Each of these 20 initial categories is further classified into one or more subcategories. These subcategories are identified merely by their names and by examples of specific room types that would likely be included. The examples of room types are neither exhaustive nor mutually exclusive, but are instead intended to characterize the nature of the subcategory. It should be emphasized that all rooms classified into a subcategory must meet the definition of the main category itself.

Exclusions

A specific set of Room Types Excluded has been specified for most categories of space to assist in the immediate identification of classification problems. For detailed commentary on individual rooms it is recommended that the glossary be consulted.

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Glossary

Section 3 of the classification scheme is the glossary. This is intended to be a flexible document which will record detailed decisions and trade-offs that have been made in space classification problems. In some cases use of the glossary is probably the only means by which a room could be classified (e.g. see "Computing Facilities"). The glossary therefore, forms an integral part of the classification scheme.

Scope of Inventory

The inventory of space that is to be reported is to include all spaces defined in the classification scheme regardless of whether the space is owned, leased or rented by the university or others, and regardless of the source of funds used for its construction or acquisition and regardless of the age or condition of the space. By this definition, the space reported may include facilities not owned by the university on one hand, or may exclude owned facilities on the other. Owned facilities which are excluded for example, could be houses used for domestic purposes or income and other properties which only incidentally serve the university population. In the broadest terms, the space to be reported should be that necessary and useful to the university in supporting the institution and its faculty, staff and students in their mission of instruction, research and public service.

Coding

The classification scheme in the strictest sense is not a coding scheme in that no information about the relationships between the categories is implied or can be obtained from the category numbers. It would appear that broad agreement on just what these relationships might be cannot be reached. In the absence of further direction, several universities have used the present list of numbers as a self-contained coding structure or have used the list as the basis for the development of a detailed use- coding scheme. As unsystematic as this may be, it at least assures a direct map into any future code structure which may be used for inter- university reporting, although of course, any set of one-to-one identifiers would do. In any event, it is expected that government reporting or inter-university comparison of space types will be conducted at the category or subcategory levels of detail. (This of course does not preclude the possibility of reporting by department and space type say, or by source of funds and space type.) It is further recognized that this classification scheme will not normally

be detailed enough for internal use and the universities may differ widely on the development of a third level of space classification. It is expected that any handling of data at this third level will be on an ad-hoc basis and that no large systematic reporting or handling of data need be included for. Alternatively, the universities are encouraged to develop automatic means for reporting at the subcategory level, with and without subtotalling by department, building, and possibly source of funds.

Pro-Rationing

One of the primary purposes of the classification scheme was to distinguish between spaces that were put to differing uses by means of adequate definitions or, where these judgements were difficult to make, to develop entire new categories to describe those which fell somewhere in between. Pro-rationing should not, in general, be required to distinguish between differing uses or even to describe multiple use facilities. Whole classifications should almost always be attempted on the basis of the closest definition. Of course, minimizing the pro-rationing of rooms on the basis of use will not necessarily extend to the control, function or funding of space.

Source of Funds

As previously mentioned, all facilities that can be classified by the definitions are to be included regardless of source of funds. While source of funds is an important component in the description of the capital assets of an institution and, in particular, special provisions need to be made to encourage private funding of universities, it was felt that these matters lie outside the development of a space classification scheme. It was expected that each university would retain suitable records of its funding sources without direction.

Measurement of Space

Exacting definitions of space classifications were reviewed on pages 23 through 27 of Volume 1 of Building Blocks and comprise an excellent discussion of the major space types. Further specification of the methodology of space measurement hardly seems appropriate in such a practised jurisdiction as Ontario. There are two areas however, in which recurring difficulty in the classification of space are apparent. The first concerns the classification of Inactive space.

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Broadly speaking, the intent of the classification scheme is to classify inactive spaces as either assignable or unassignable. Inactive Assignable (Category 19.5) spaces are those which are deemed to be available for immediate occupancy but which had not been assigned to individuals or groups at the time of the survey. These spaces then, are unassigned (to individuals or groups) but are assignable (available for immediate use). Also included in this group would be larger areas constructed, finished and held for future use, or areas removed from active use because of declining needs or lack of operating funds, for example, an entire floor of a building which has been locked and kept under minimum heating. Such spaces, even though they may require some start-up time, should be reported in this subcategory. Further reporting in this subcategory could be spaces of small or moderate size which were unavailable for use for periods of time of up to one-half of an academic term, due to regular maintenance, refurbishing or minor renovations and for which the inclusion of the space either here (or for that matter in Categories 1 to 15), would not normally present a distortion of the needs of the institution.

The classification Inactive Unassignable (Category 16.3) should be then reserved for those spaces which would require long lead times and extensive work to make them available for occupancy. Such spaces would include those left unfinished at the time of construction or those undergoing renovations or major repairs requiring large areas of a building to be out of service for many months. In the case of very extensive renovations, it may in fact be more convenient to consider the building as "under construction" and simply not report the space at all.

The second difficult area of classification concerns the measurement of Circulation Area. According to the adopted definition on page 26 of Building Blocks, circulation area is that which is required for physical access to some subdivision of space - whether or not enclosed by partitions. With increased use of office landscaped designs and the particular problems of measuring library space, there appears to be a need for some commentary in order that uniformity of measurement is achieved.

For such large unobstructed areas we should note that:

a) Code requirements must be met. The Ontario Fire Marshall's Office requires that floor plans of office landscaped areas indicate fire corridors, which must be left unobstructed. In addition, in some work areas subject to congestion, for example, large machine shops or warehousing areas, corridor demarcations may be painted on the floor to indicate fire escape

routes or areas that must be left unobstructed for safety reasons. These should be measured as Circulation Area.

b) The divisions of space for which general access is required, as referred to in the Building Blocks definition, should certainly be construed to be those at the Category level of detail, and in most cases, the divisions should be made at the Subcategory level. In other words, routes necessary for general access to blocks of space which would be inventoried within a single subcategory, or corridor spaces which separate areas falling into separate subcategories, should be measured as Circulation Area.

c) Single rooms or work areas, plus integral support areas which serve a single purpose, for example: a gymnasium; a block of book stacks; spectator seating areas; or accounts payable offices plus file areas; should not include any spaces within them as Circulation Area. It is general access to the area which is the determinant, not routine movements within those spaces. Once again, an interpretive judgement will often need to be made on this space type.

Age and Quality

The age or condition of space is not to be held as a consideration when reporting space in the classification scheme. While it is agreed that such considerations may have considerable impact on the efficiency or usability of facilities, it was felt that these effects lie outside the purposes of the space classification scheme. First, the definitions are intended to classify space as used or as available for use. Second, no satisfactory methodology has yet been devised by which to judge the quality of space. Third, it is almost certain that such a judgement would be at least partly predicated on the actual inventory of the facility. It is recognized that some square metres are not equivalent to others, but the means for making these assessments must be separate from those used to inventory and classify the spaces.

Clinical Facilities

The inventory of universities with programmes in the health sciences may include spaces which are used as hospitals or may house clinical staff usually located in hospitals. Much but not all of the funding for these facilities was provided under the Health Resources Development Plan and is historically referred to as

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Z-formula space. In the 1978 edition of Building Blocks, Volume 6, no specific method of reporting hospital or clinical facilities was identified.

The 1986 edition defines Category 20 as space that is used in direct support of instruction, research and service for clinical health science disciplines. This will include all areas used for patient care, such as patient bedrooms and bathrooms, nurses' stations, surgery, treatment rooms, waiting rooms, and service and supply areas.

In addition to the above categories of space, Category 20 should also be used for health science space in support of clinical instruction or research where the corresponding input measures are not included in Categories 1-15.

Input measures and inventory supporting the basic medical sciences (Anatomy, Biochemistry, Biophysics, Genetics, Microbiology, Pathology, Pharmacology, and Physiology) will continue to be reported in Categories 1-15, along with other health programmes (Dentistry, Nursing, Pharmacy, Optometry, Rehabilitation Therapy) identified in the Undergraduate and Research Laboratory groups.

For convenience, the definition of FFTE Undergraduates has been drawn up in such a way that it will include interns and residents. It is felt that the distortion of generated space is not serious.

Both input measures and space inventory should relate only to clinical space owned and operated by the university.

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SPACE CLASSIFICATION SCHEME

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SPACE CLASSIFICATION SCHEME

Section 2 - Definitions

1. CLASSROOM FACILITIES

Definition

A room generally used for scheduled teaching purposes, not requiring special equipment of a kind that makes the room unsuitable for classroom instruction, and rooms directly serving such facilities.

Subcategories

1.1 Tiered classrooms

Tiered or sloped-floored lecture theatres, lecture rooms, lecture demonstration rooms, and classrooms.

1.2 Non-tiered classrooms

Flat-floored lecture rooms, classrooms, seminar rooms, and tutorial rooms.

1.3 Classroom service space

Examination rooms, projection rooms, preparation rooms, closets, storage rooms and other related areas.

Room types excluded

Class laboratories - see category 2.

Assembly facilities - see category 15.

Conference rooms - see categories 4.5 and 10.2.

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2. LABORATORY - UNDERGRADUATE

Definition

A room used for instruction requiring special-purpose equipment for undergraduate student participation, experimentation, observation, or practice in a field of study, and rooms directly serving these facilities.

Subcategories

2.1 Scheduled class laboratory space

Teaching laboratories, special subject rooms, instructional shops, typing laboratories, drafting rooms, art, dance and music studios, music practice rooms, language laboratories, computer terminal rooms and athletic facilities primarily used for instruction, and other specially designed rooms largely used for scheduled instruction, such as dental, rehabilitation, and psychology clinics.

2.2 Unscheduled class laboratory space

This subcategory may be optionally used to classify general workrooms, drafting rooms, and other special-purpose facilities generally used for informal or irregularly scheduled instruction, or for practice.

2.3 Laboratory (undergraduate) support

Preparation rooms, balance rooms, laboratory storage rooms, demonstration rooms, animal areas, greenhouses, dark rooms, etc. directly serving the laboratory facilities.

Room types excluded

Laboratory space for graduate students and faculty - see category 3.

Non-university clinic facilities for health science programmes in hospitals or other health care areas - see category 20.

Clinic facilities for university health services - see category 13.

Athletic facilities - as defined in category 6.

Service areas for these excluded room types.

Animal areas classified elsewhere - see categories 3 and 18.

Greenhouses classified elsewhere - see categories 3, 9 and 15.

Computer terminal rooms for student use, not in support of scheduled instruction - see category 12.3.

3. LABORATORY - GRADUATE AND FACULTY

Definition

A room used for laboratory applications, research or training in research methodology which requires special-purpose equipment for staff or graduate student experimentation or observation, and rooms directly serving these facilities.

Subcategories

3.1 Laboratory space

Faculty, graduate, and general research facilities.

3.2 Laboratory (faculty and graduate) support space

Rooms directly serving one or more research facilities which directly provide the necessary support to the research functions such as balance rooms, coat rooms, storage areas, dark rooms, technicians' office/workrooms, workshops, animal areas, and greenhouses.

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Room types excluded

Undergraduate laboratories and their support space - see category 2.

Animal areas classified elsewhere - see categories 2 and 18.

Greenhouses not in support of research - see categories 2, 9 and 15.

4. ACADEMIC DEPARTMENTAL OFFICES AND RELATED SPACE

Definition

A room usually assigned to one or more individuals on a permanent basis, containing office-type equipment and used by faculty, departmental administrative and support staff, and students, or a room directly serving these facilities.

Subcategories

4.1 Faculty offices

Single or multiple-occupancy offices for teaching and research faculty with rank up to and including department chairmen.

4.2 Other academic appointments offices

Office space used by post-doctoral fellows, visiting professors, adjuncts and other research staff, not holding a regular faculty appointment. See the definition of Other Research Appointment (Appendix D, 4.0).

4.3 Graduate student offices

Single or multiple-occupancy rooms assigned to graduate students for study and to graduate and undergraduate students in their capacity as tutors, teaching or research assistants.

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4.4 Departmental support staff offices

Office space used by demonstrators, technicians, other professional staff, administrative, clerical and secretarial support staff to academic departments.

4.5 Office support space

Rooms directly serving office space in this category such as conference rooms, computer rooms not for student use, special reference libraries, file rooms, vaults, duplicating rooms, waiting and reception areas, interview rooms, storage areas, private toilets, lunch rooms, and private departmental lounges.

Room types excluded

Student offices associated with extra-curricular student organizations - see category 14.

Graduate laboratory work stations - see category 3.

Technicians' offices/workrooms classified elsewhere - see categories 2, 3, 5, 11 and 12.

Offices for deans and directors of major academic divisions and their support personnel - see category 10.

Offices for general university administration - see category 10.

Central duplicating and printing areas - see category 12.

Lounges intended for general use - see category 14.

All space under the administration of the university library system.

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5. LIBRARY AND STUDY FACILITIES

Definition

A room or group of rooms used for the acquisition, storage, circulation, study, or use of books, periodicals, manuscripts, and other reading and reference materials generally under the administration of the university library system and accessible to the university population at large, and rooms directly serving these facilities. Refer to Section 1 (pp. 49-50) for notes on the definition of circulation space within libraries.

Subcategories

5.1 Library collection space

Stack and storage areas for books, archives, maps, documents, records, tapes, slides, micromaterials, periodicals, and music scores.

5.2 Study space

Library reading rooms, study carrels, open-stack reading rooms and study areas available to the general university population. These could be located in residences, or in facilities administered by the university library system, or academic departments.

5.3 Library support areas

Office and related areas for library administration, catalogue area, circulation desk, processing areas, bookbinding and repair areas, acquisition and cataloguing work areas, and library staff lounges.

Room types excluded

Media storage for language laboratories - see category 2.

Media storage for audio-visual facilities - see category 11.

Media storage for recreational purposes - see category 14.

Study areas assigned to individuals for their exclusive use in areas not administered by the university library system - see category 4.3.

Special reference libraries and departmental reading rooms not under the control of the university library administration - see categories 4, 11, 12 and 19.

Faculty and instructional areas associated with academic programmes in library science and teacher education - see categories 2 and 3.

6. RECREATION/ATHLETIC SPACE

Definition

All indoor areas used by students, staff, or the public for athletic activities, either for recreational or competitive purposes, and rooms directly serving these facilities.

Subcategories

6.1 Athletic activity areas

Gymnasia, dance studios, swimming pools, basketball, handball and squash courts, combatives rooms, ice rinks, indoor tracks, indoor rifle and archery ranges, and activity areas including those within field houses.

6.2 Athletic seating areas

All permanent seating and observation areas in gymnasia, swimming pools, field houses, ice rinks, and other indoor activity areas.

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6.3 Athletic service space

All ancillary areas directly serving the above such as locker rooms, shower rooms, washrooms, coaches' rooms, equipment supply rooms, and rooms serving athletic facilities.

Room types excluded

Laboratories required to support programmes in Physical and Health Education - see categories 2 and 3.

Office and office-related space serving athletic facilities - see category 10.

Office and office-related space in support of programmes in Physical and Health Education - see category 4.

Indoor rifle ranges associated with military training - see category 19.

7. FOOD SERVICE

Definition

A room or group of rooms used for preparing or eating food or which directly serve these facilities including central facilities located in residences and faculty clubs.

Subcategories

7.1 Food Facilities

Dining rooms, cafeterias, snack bars, coffee shops, restaurants, vending machine and other refreshment areas, including student pubs, if they are primarily used for food service.

7.2 Food facilities service

Kitchen, servery, all food preparation areas, dishwashing areas, refrigeration rooms, freezer, and kitchen storage, receiving, refuse areas and staff lunch, locker and private washrooms.

Room types excluded

Office and office-related space which support food service facilities - see category 10.

Refreshment booths in athletic facilities - see category 6.

Kitchen and dining areas located in private living quarters - see category 17.

8. BOOKSTORE AND OTHER MERCHANDISING FACILITIES

Definition

A room or group of rooms used to sell products or services, exclusively or primarily for the university population, and rooms directly serving these facilities.

Subcategory

8.1 Bookstore/Merchandising

Bookstores, Canada Post Office, barber shops, other stores, and associated service space operated by the university or a commercial enterprise renting space from the university. Includes staff offices in support of these functions.

Room types excluded

General-use food service facilities - see category 7.

Departmental and campus mail rooms - see categories 4, 10 and 12.

9. PLANT MAINTENANCE

Definition

Space associated with the operation and maintenance of university buildings, grounds, and other elements of the physical plant.

Subcategory

9.1 Plant maintenance

Shops and storage areas for carpentry, plumbing, painting, electrical and other trades, lunch, locker and change rooms for maintenance and custodial staff, garages for maintenance vehicles and all grounds equipment, greenhouses and related areas.

Room types excluded

Janitorial facilities not listed above - see category 16.

Vocational, technical, and instructional shops in support of academic programmes - see categories 2 and 3.

Office and office-related space - see category 10.

Security-related areas - see category 10.

AV/TV repair shops - see category 11

Central stores - see category 12.

Computer repair shops - see category 12

Central utility plant - see category 16.

Revised 1987

10. ADMINISTRATIVE OFFICE AND RELATED SPACE

Definition

A room usually assigned to one or more individuals on a permanent basis containing office-type equipment and used by administrative and support staff, or a room directly serving these facilities.

Subcategories

10.1 Office areas

Single or multiple-occupancy rooms for executives, administrative staff, deans and directors of major academic divisions, associate or vice-deans and their immediate support personnel.

10.2 Office support space

Rooms directly serving office space in this category such as conference rooms, special reference libraries, file rooms, vaults, duplicating rooms, computer rooms for administrative use, waiting and reception areas, interview rooms, storage areas, private toilets, lunch rooms, and private departmental lounges.

Room types excluded

Office and office-related areas classified elsewhere - see categories 4, 5, 8, 13, 14 and 17.

Central mail, duplicating and printing areas - see category 12.

Lounges intended for general use - see category 14.

11. AUDIO-VISUAL/TELEVISION FACILITIES

Definition

A room or group of rooms used in the production, distribution, and storage of non-print instructional media, and rooms directly serving these facilities, providing campus-wide rather than exclusively departmental services.

Subcategory

11.1 AV/TV facilities

Radio, TV, sound, photography, and graphic studios, film and tape libraries, control rooms, storage rooms, recording rooms, repair and servicing work rooms, dark rooms, preparation rooms, and similar related areas.

Room types excluded

Rooms used primarily in support of an academic programme - see category 2 and 3.

Offices and office-related space serving this category - see category 10.

Printing of instructional media - see category 12.

12. CENTRAL SERVICES

Definition

A room or group of rooms used to provide campus-wide services for both academic and non-academic sections of the university, and rooms directly serving these facilities.

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Subcategories

12.1 Computing facilities

Central data processing facilities, computer rooms, key-punch areas, technical service and repair areas and their support spaces.

12.2 Other central services

Central and regional printing and duplicating shops, central receiving areas, central stores, university mail rooms, laundry and drying rooms located in a central laundry, and technical service and repair areas.

12.3 Student Computer Rooms

Computer or terminal rooms available for use by students for non-scheduled instruction or study.

Room types excluded

Data processing facilities and related areas intended for the sole use of the academic and non-academic staff of a single unit - see categories 4.5 and 10.2.

Computer rooms for scheduled instruction - see category 2.1.

Computer rooms for research - see category 3.

Laundry and drying rooms classified elsewhere - see categories 6, 8, 17 and 19.

Office or office-related space serving these facilities - see category 10.

AV/TV repair - see category 11

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13. HEALTH SERVICE FACILITIES

Definition

A room or group of rooms intended to supply health services primarily to the general university population, and rooms directly serving these facilities.

Subcategory

13.1 Health service facilities

Student infirmaries, first aid rooms, doctors' offices/examining rooms, their support areas, offices and related areas within health service facilities, and first-aid rooms located elsewhere.

Room types excluded

Laboratory clinics - see categories 2 and 3.

Recreation/Athletic first-aid rooms - see category 6.

Clinic facilities for health science programmes in hospitals or other health care areas - see categories 2, 3 or 20.

14. COMMON USE AND STUDENT ACTIVITY SPACE

Definition

A room or group of rooms accessible to the general university population intended for recreation, rest, or relaxation, or rooms directly serving these facilities.

Subcategories

14.1 Student offices and support space

Offices and support space for student government, publications, and clubs.

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14.2 Recreational facilities and service

Bowling alleys, pool and billiard rooms, ping-pong rooms, ballrooms, chess rooms, card playing areas, music listening areas, hobby rooms, storage and equipment issue rooms, pubs not primarily for food service.

14.3 Lounge and service space

All general lounge space and kitchenettes, whether for students, faculty, or administrative staff, lounges in residences if available to non-residents, and lounges in faculty clubs, including related service space.

Room types excluded

Athletic facilities, wherever situated, such as gymnasia, pools, and basketball, handball, and squash courts - see category 6.

Lounge space classified elsewhere - see categories 4, 5, 10, 16 and 17.

Offices for administrative staff concerned with student affairs and services - see category 10.

15. ASSEMBLY AND EXHIBITION FACILITIES

Definition

A room or group of rooms intended to serve the general university population and to be used for dramatic, musical, or devotional activities or for exhibition purposes, and rooms directly serving these facilities.

Subcategories

15.1 Assembly facilities

Theatres, auditoria, concert halls, chapels, and convocation halls and ancillary areas such as checkrooms, coat rooms, ticket booths,

concession booths, dressing rooms, projection rooms, storage and control rooms.

15.2 Exhibition facilities

Museums, art galleries, other exhibition areas, greenhouses used for display only and supporting areas.

Room types excluded

Areas for displaying collections intended primarily for instructional and research purposes - see categories 2 and 3.

Assembly facilities for the primary use of academic programmes - see categories 1 and 2.

16. NON-ASSIGNABLE

Definition

A room or area that is not available for assignment to the occupants of a building but which is necessary for the general occupation or mechanical support of one or a number of buildings.

Subcategories

16.1 Central utility plant

All boiler rooms, refrigeration plant, electrical transformer stations, cooling towers, compressing stations, water treatment facilities, incinerator, and their support areas serving more than one building or the entire campus.

16.2 Other non-assignable areas

Areas used or occupied by janitorial staff, circulation spaces, mechanical and electrical spaces, an incinerator serving one building, and public washrooms.

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16.3 Inactive unassignable

Spaces which would require long lead times and extensive work to make them available for occupancy. See p. 49.

Room types excluded

Circulation aisles within office suites, auditoria, or work areas.

Special-purpose storage and maintenance rooms - see categories 9 and 17.

Custodial lunch, locker and change rooms - see category 9.1

Offices for custodial supervisors and plant engineers - see category 10.

17. RESIDENTIAL SPACE

Definition

A room or rooms used to accommodate one or more individuals and the ancillary areas in direct support of such rooms.

Subcategories

17.1 Residence living space

Single or multiple-occupancy bedrooms, and all space within apartments.

17.2 Residence service space

Laundry rooms, recreational areas, music rooms, games rooms, locker rooms, lounges only available to occupants of that residence, tuck shops, and administrative office space in direct support of residences.

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Room types excluded

General-use lounges and recreation areas - see category 14.

General-use library and study areas - see category 5.

Food service and merchandising facilities coded elsewhere - see categories 7 and 8.

18. ANIMAL SPACE

Definition

Animal facilities in overall support of teaching or research and not normally integrated with or under the control of academic departments.

Subcategories

18.1 Specialized central areas

Conditioning, rearing, and long-range animal holding areas, and rooms directly serving these facilities.

18.2 Farm-type areas

Barn structures, feed storage, and field service areas.

Room types excluded

Animal areas integrated with or under the control of academic departments and in direct support of teaching or research - see categories 2 and 3.

Specialized facilities within central animal areas which are in direct support of research such as operating suites - see category 3.

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19. OTHER UNIVERSITY FACILITIES

Definition

Any room or area not included in categories 1 through 18.

Subcategories

19.1 Day care facilities.

19.2 Rifle ranges and other space in support of military training.

19.3 Merchandising facilities not exclusively or primarily serving the university population.

19.4 Demonstration schools, and other instructional institutions for non-university students.

19.5 Inactive assignable space.

Spaces which are deemed to be available for immediate occupancy but which have not yet been assigned to individuals or groups.

19.6 Non-institutional agencies occupying university space.

20. HEALTH SCIENCE CLINICAL FACILITIES

Definition

Space owned or operated by the university that is used in direct support of instruction, research and service for clinical health science disciplines.

To be included:

1. health care areas, such as patient bedrooms and bathrooms, nurses' stations, surgery, treatment rooms, waiting rooms and service and supply areas;

2. all space in support of clinical instruction, research and service;

3. space where the corresponding input measures are not included in Categories 1-15 of the space formula and for which capital funding responsibility is assumed to be that of the Ministry of Health.

Room types excluded

Space occupied by the basic medical sciences, such as Anatomy, Biochemistry, Biophysics, Genetics, Microbiology, Pathology (where non-clinical), Pharmacology and Physiology. See categories 1-15.

Offices occupied by the Chair and associated staff of all clinical teaching departments. See Category 4.

Space occupied by university health service. See Category 13.

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SPACE CLASSIFICATION SCHEME

Section 3 - Glossary

TYPE OF SPACE		DEFINITION	CATEGORY
Animal Space	1.	Rearing, conditioning, and holding facilities before animals are ready or required for teaching and research purposes, located either on or off campus.	18,20
	2.	Facilities for long-term holding and care of animals following surgical or other investigative treatment, located either on or off campus.	18,20
	3.	Short-term holding and care of animals either before or following surgical or other investigative treatment, located on campus and closely related to academic departments. - in support of teaching - in support of research	 2 3
	4.	Animal operating suites either for the use of one or several academic departments, located either on or off campus.	3
Clinical Facilities	1.	Formerly known as Z-formula space. All space owned or operated by the university that is used in direct support of instruction, research and service in the clinical disciplines of Medicine and Veterinary Medicine.	
Coatrooms	see Lockers		
Computing Facilities	1.	Centrally located and providing campus-wide services to both academic and non-academic sections of the university.	12
	2.	Located in space of an academic division for its convenience, in support of instruction, or research, or both, but available also for general use by all sections of the university.	12

TYPE OF SPACE		DEFINITION	CATEGORY
	3.	Located in space of an academic division and fully used by that division for combinations of instruction, research, and administration.	12
	4.	Located in space of an academic division for a specific use by that division as for example:	
		- for scheduled instruction in the use of computer equipment	2
		- for service to research by departments of the division	3
Demonstration Schools	1.	Facilities generally integrated with university facilities, in which children receive regular school instruction and are available for practice teaching and observation.	19
Examination Rooms	1.	Space used exclusively or primarily for examination purposes throughout the academic year.	1
	2.	Space used only occasionally for examination purposes as for end-of-term examinations, the primary use of which is for other purposes, classified in the category of its primary use as for example:	
		- an arena or gymnasium used for final examinations	6
		- a meeting or assembly hall used for final examinations	15
Greenhouses	1.	Primarily in support of undergraduate instruction	2
	2.	Primarily in support of graduate instruction and research	3
	3.	Primarily in support of university grounds keeping	9
	4.	Primarily for exhibition and display purposes	15
	5.	For farm use	18
Inactive Space	1.	Space available for occupancy but not assigned at the time of the survey	19.5

TYPE OF SPACE		DEFINITION	CATEGORY
	2.	Space not available for occupancy which was left unfinished at the time of construction	16.3
	3.	Single rooms or small groups of rooms not available for occupancy due to repairs, renovations, or remodelling to be reported in the category of its intended future use	19.5
	4.	Non-institutional agencies occupying university space.	19.6
	5.	Buildings under construction are not to be reported.	
Kitchenette	1.	For an academic department	4
	2.	For an administrative department	10
	3.	For general lounge service	14
Class Laboratories	1.	Primarily used for scheduled instruction, classified as Scheduled Class Laboratory Space	2
	2.	Used in an unknown fashion or intended for scheduled use but just not used at the time of reporting, classified as Scheduled Class Laboratory space	2
	3.	Primarily used for informal or irregularly scheduled instruction, and for practice, classified as Unscheduled Class Laboratory Space	2
Language Laboratories	See Class Laboratories.		
Lockers	1.	In support of a particular room, classified in the category of the space it supports, as for example:	
		- for a classroom	1
		- for a teaching laboratory	2
		- for a cafeteria	7
	2.	For the general use of the students in a building	14
	3.	Lockers in corridors	16

TYPE OF SPACE		DEFINITION	CATEGORY
Lounges	1.	For the private use of an academic department	4
	2.	For the private use of library staff	5
	3.	For the private use of a department in central administration	10
	4.	For the general use of students or staff or both regardless of where located	14
	5.	For general use in residences	14
	6.	For the private use of occupants of residences	17
Lunch, Locker, and Change Rooms	1.	In support of a particular kind of space to be and classified in the category of the space it supports, for example:	
		- for physical education	6
		- for a bowling alley	14
		- for a research lab	3
	2.	Provided for the exclusive use of people as necessary in the performance of their jobs, to be classified as the characteristic kind of space for that department, for example:	
		- for food service staff	7
		- for security patrolmen	10
		- for maintenance personnel	9
		- for custodial staff	9
Mail Rooms	1.	A central facility for sorting and distributing mail for the campus	12
	2.	Canada Post Office	8
	3.	A room for sorting and distributing mail for:	
		- academic departments	4
		- central library	5
		- service departments and central administration	10
Media Storage (Recorded Music)	See Music Scores Storage and Tape Storage		

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TYPE OF SPACE		DEFINITION	CATEGORY
Merchandising	1.	Products or services provided by the university or a commercial enterprise renting space from the university	
		- exclusively or primarily for the university population as for example a textbook store	8
		- exclusively or primarily to the non-university community as for example a bank, public office, or commercial building	19
Music Practice Rooms	See Class Laboratories		2
	See Residence		17
Music Scores Storage	1.	For music studios or practice rooms as part of instruction in music	2
	2.	For instruction or research, and located in libraries	5
	3.	For music listening and recreation, and available to the university population at large, not in the central library	14
	4.	For the exclusive use of occupants of residences	17
Offices	1.	For faculty, post-doctoral fellows and other equivalent-to-faculty research appointments, and graduate students.	4
	2.	For the most senior academic administrator in a major division of the university, usually called a dean or director, and their immediate support personnel	10
	3.	For academic heads of single academic departments or small groups of closely related programmes, usually called a chairman or department head but sometimes called a dean or director, especially of a school	4
	4.	For shared support personnel between the above two categories	10
	5.	For departmental support staff	4
	6.	For library staff	5
	7.	For central administrative staff	10

TYPE OF SPACE		DEFINITION	CATEGORY
	8.	For managers and administrative staff or merchandising operations providing services exclusively or primarily for the university population	8
	9.	For recreation/athletic staff	10
	10.	For food service staff	7
	11.	For maintenance staff	10
	12.	For custodial supervisors	10
	13.	For AV-TV staff	10
	14.	For central services staff	10
	15.	For medical doctors, nurses, and administrative staff engaged in providing health care to students	13
	16	For student clubs or student government	14
	17.	For technicians - see Technicians' Space	
	18.	For research associates - see Research Assistants' Space	
Research Assistants Space	1.	Space primarily used as work rooms rather than offices, classified as research support space	3
	2.	Space containing only office-type equipment, assigned to individuals, classified as departmental office space	4
Special Reference Libraries	1.	Reference libraries and reading rooms, not under the administration of the central library system, usually containing specialized or selected materials or special study facilities classified as part of the space they occupy as for example:	
		- in an academic department	4
		- in computer facilities	12
		- in residences	17

TYPE OF SPACE		DEFINITION	CATEGORY
Special Subject Rooms	1.	For scheduled instruction in non-laboratory oriented subjects for which the space per station is larger than for a normal classroom to accommodate special arrangement of stations or equipment as for example in faculties of Education and Law	2
Stores and Storage	1.	Central receiving and storing of equipment, materials, and supplies for university-wide use	12
	2.	Storage areas within individual departments, classified in the category of the space they support as for example:	
		- classroom storage	1
		- department office supplies storage	4
		- building and grounds maintenance storage	9
		- residence storage	17
Study Space	1.	Library study space for general or assigned use, under the administration of the university library system	5
	2.	Departmental study space for general or assigned use, under the administration of the central library system	5
	3.	Departmental study space for general or individual use, but restricted to individuals associated with the department (graduate student offices)	4
	4.	Other departmental study space for undergraduate students in support of laboratory instruction (unscheduled class lab)	2
	5.	Study space in residences for the exclusive use of the residents and not part of departmental or university library space	17
Tape Storage	1.	In direct support of teaching	2
	2.	In libraries	5
	3.	In support of AV-TV	11
	4.	Computer tape storage	12

TYPE OF SPACE		DEFINITION	CATEGORY
Technicians' Space	1.	Space which may contain a desk but is primarily used as a work room rather than an office, classified in the category of space it supports, as for example:	
		- for teaching laboratories technicians	2
		- for research technicians	3
		- for AV-TV technicians	11
		- for technicians in central services	12
	2.	Space containing only office-type equipment, classified in the category of the office space of the department in which the technician works, as for example:	
		- in teaching laboratories	4
		- in research laboratories	4
		- in AV-TV	10
		- in central services	10
Unassigned or Unfinished Space	See Inactive Space		
Unscheduled Class Labs	See Class Laboratories		
Z-formula Space	See Clinical Facilities		

Appendix C

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Appendix C

LIST OF REVISED INPUT MEASURES

Input Measure		Used for Space Category:
1.0	FTE Students	Category 1. Classroom
		Category 6. Recreation/Athletic
		Student and Central Services: Categories 7, 8, 11, 12, 13, 14 combined.
1.1	FFTE Undergraduate Students	Category 5. Library - Study
1.2	FTE Graduate Students	Category 3. Laboratory - Graduate and Faculty
		Category 4. Academic Departmental Office
		Category 5. Library - Study
1.3	Professional Students	Category 5. Library - Study
2.0	Laboratory Weekly Student Contact Hour	Category 2. Laboratory - Undergraduate
3.0	FTE Faculty	Category 3. Laboratory - Graduate and Faculty
		Category 4. Academic Departmental Office
4.0	Other Research Appointments	Category 3. Laboratory - Graduate and Faculty
5.0	FTE Non-Academic Office Staff Academic Departments Non-Academic Departments	Categories 4 and 10. Office
6.0	Total Net Assignable Inventory	Category 9. Plant Maintenance
7.0	Library Collections (Equivalent Volumes)	Category 5. Library - Stack

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Definition of Input Measures

The following definitions identify seven major groups of input measures that are used in determining the space requirements of an institution. The names of the input measures may be readily recognized as being in common university use, but are not always valid for inter-institutional comparison unless detailed descriptions of the terms and, in some cases, the possible end uses are specified.

INPUT MEASURES

1.0 FTE Students

1.1 FFTE Undergraduate Students

1.2 FTE Graduate Students

The definitions for student enrolment currently contained in the MCU Operating Formula Manual will govern the input measures as they pertain to students. Thus, the FTE student count will be consistent with the numbers reported to the Ministry via the USIS-UAR tape submission as of November 1.

The number of FTE students reported will be the sum of:

1) eligible fall term FFTE undergraduate students x 2;

2) eligible and ineligible GFTE graduate students;

3) such adjustments as may be required because of affiliated institutions.

Notes and special considerations:

For those universities that do not distinguish enrolment of affiliated institutions on a separate tape, the enrolment of affiliates should be

excluded when the related space is not included in a reporting university's inventory.

For universities providing teaching services to affiliated church colleges, the enrolment is to be determined after allowing for the net services provided: for the students receiving instruction both from the university and from the affiliated college, or for programmes where instruction is provided by both institutions. The fiscal full-time equivalency rules are to be applied to the course registrations, to determine the new enrolment.

The inclusion of the ineligible graduate students is appropriate, in order to take into account all students who are making substantial demands on university facilities.

1.3 Professional Students

Enrolments for professional programmes (used as an input measure for the generation of library study space) are the count of students in post-baccalaureate programmes leading to a professional degree. These programmes are Dentistry, Education (not concurrent), Law, Medicine, Optometry, Pharmacy and Veterinary Medicine.

2.0 Laboratory Weekly Student Contact Hours

Definition:

The total weekly-student-contact-hours of instruction offered by a university as part of a programme of studies leading to a degree or diploma. The contact hours are computed as the product of the course enrolment and the hours of scheduled instruction received by each enroled student during a typical academic week.

Laboratory weekly-student-contact-hours pertain to those contact hours of courses or portions of courses in which the instructional activity is facilitated by demonstration or experimentation requiring additional equipment not ordinarily available in classrooms.

This would normally include courses requiring the use of language laboratories, the subject classrooms of faculties of education, visual arts and other studios, the teaching of musical instruments, and didactic

practice of a sport activity, as well as the traditional engineering, physical and biological science laboratories described in the Space Classification Scheme under category 2.

A contact hour is the time that the instructor of the course (or lab assistant) is supervising a formal laboratory session in a specialized teaching facility. Make up hours, or project time over and above formal instruction time are not counted.

Notes and special considerations:

The course enrolment is the number of students participating in the instructional activities of the course.

Sources of data for establishing contact hours can be the university timetable if it contains accurate and detailed information on instructional hours, and type of teaching provided; a separate survey of annual teaching activities and corroborating registration data; or the course description (with hour requirements) contained in the university calendar, times course enrolments.

The reporting week of a university is to be any representative week of the Fall term. This will correspond with the student enrolment as of November 1.

3.0 FTE Faculty

The university's faculty count is to include all persons, up to and including department heads or chairmen, holding an academic appointment and involved in teaching, who receive remuneration via the university from all salary funding sources.

The university may designate each member of faculty as full-time or part-time, but such designation should be made with consideration of the expected contribution of the member's time required to fulfil assigned responsibilities.

The full-time equivalent of part-time faculty is derived by dividing the total salary paid to part-time faculty by the average salary of all university full-time faculty.

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Notes and special considerations:

The term academic appointment will normally be limited to those persons who are in or above that rank which is immediately below that of Assistant Professor, as consistent with Statistics Canada reporting.

Included are visiting appointments and faculty on sabbatical or study leave of at least three months' duration.

Excluded are post-doctoral fellows, clinical staff with full- or (the part-time portion of) part-time hospital appointments and faculty on unpaid leaves of absence, deans, vice-presidents and presidents.

4.0 Other Research Appointments

Definition:

Generators of research who are not regular faculty as defined in 3.0, but who have similar research space requirements. This category includes post-doctoral fellows at any salary, and other equivalent-to-faculty research appointments, only if the annualized salary paid via the university (irrespective of funding source) is equal to or higher than the floor of the assistant professor range at that institution. The count date should be 1 October, or another date that accurately reflects demand during the Fall session. Since researchers who are at the university for a short time will normally not require separate space, the count should be limited to appointments of at least three months' duration.

Notes and special considerations:

Exclude individuals already under other categories, such as faculty, graduate students, and administrative staff.

5.0 FTE Non-Academic Office Staff

Definition:

The full-time equivalent of all filled established positions for secretarial, clerical, professional and management staff requiring offices, with appointments of at least three months' duration as of 1 October. This will

include non-academic office staff in teaching and research units, central computing and data processing, physical plant, student services, academic services and administration, not included in other categories. Staff of ancillary operations, and federated and affiliated institutions are excluded. Technicians are also excluded, since their office space is generated in the laboratory categories.

This definition is based on the instructions for the annual reporting of data to COU on non-academic employees, except that staff paid via the university from all funding sources, rather than operating funds only, will be included. Positions which are full- time for 8 months would be counted as .67. Similarly, half-time positions for 12 months would be counted as .50.

Notes and special considerations:

Staff having offices inventoried in categories 4.0 (Academic Office) or 10.0 (Administrative Office) are included. Staff having offices inventoried in other categories: 5.0 (Library), 8.0 (Bookstore/Merchandising, 13.0 (Health Service) and 17.0 (Residence) are excluded. Academic administrators or professionals already counted as FTE faculty or as other research appointments are also excluded.

6.0 Total Net Assignable Inventory

All net assignable space inventory for Categories 1-20, excluding Category 16.

7.0 Library Collections (Equivalent Volumes)

The library materials identified in the university library catalogue and contained in the following tables are to be included at the stated volume equivalency rate.

Revised 1989

MATERIAL	ITEMS		EQUIVALENCY
For Material Stored on Horizontal Storage Units			
Volumes - excluding reference	125		125
Computer tapes	125		125
Documents, pamphlets	1,000	(items)	125
Archives	18	(boxes)*	125
Microfilm - boxed on shelves	400	(reels)	125
Microprint - boxed on shelves	50	(boxes)	125
Newspapers - current titles on display	7	(titles)	125
Newspapers - unbound back files	7	(titles)	125
Newspapers - bound back files	9	(volumes)	125
Periodicals - unbound titles on display	18	(titles)	125
Periodicals - boxed current year	50	(boxes)	125
Periodicals - boxed back files	50	(boxes)	125
Periodicals & Abstracts - bound	50	(volumes)	125
Reference	45	(volumes)	125
Atlases	20		125
Sheet Music	250	(pieces)	125
Instructional Kits	45		125
Slides - carousel boxes	75	(carousels)	125
Films	125	(films)	125
Filmstrips (boxed)	2,250	(strips)	125
Videotapes	125		125

* *Hollinger Box - Legal Size*

Revised 1989

MATERIAL	ITEMS	EQUIVALENCY	
For Material in Vertical Storage Units			
Maps	400		125
Microfilm (reels)	315		125
Microprint	11,000	(cards)	125
Pamphlets	790	(pamphlets)	125
Phonodiscs - records	500		125
Phonodiscs - tapes	500		125
Phonodiscs - cassettes	650		125
Slides (in cases) - bound	2,560	(slides)	125
Slides (in cases) - unbound	5,120	(slides)	125
Filmstrips	580	(strips)	125
Mounted Photos	790	(photos)	125
Satellite Images/Aerial Photos	7,000		125

Appendix D

REVISED COU SPACE GUIDELINES (1987)

1. Classrooms		1.2 NASM per FTE student
2. Class Labs:	Group W	0.8 NASM per weekly contact hour
	Group X	0.6 NASM per weekly contact hour
	Group Y	0.5 NASM per weekly contact hour
	Group Z	0.3 NASM per weekly contact hour
3. Research:	Group A	45 NASM per input measure (FTE faculty +.5 other research appointments +.5 grads.)
	Group B	30 NASM per input measure
	Group C	20 NASM per input measure
	Group D	10 NASM per input measure
	Group E	1 NASM per input measure
4. Academic Office		13.0 NASM per FTE Faculty (plus an additional allowance of 15% for academics not included in the faculty count)
		4.0 NASM per FTE graduate student
5. Administrative Office		13.0 NASM per FTE non-academic staff requiring offices
Office Service		0.30 x total generated for faculty, graduate students and non-academic office staff
6. Library		
Stack		For compact storage:
		0.004 NASM per equivalent vol. for 10% of total collection

		For remainder of collection: 0.007 NASM per equivalent vol. for 0-300,000 vols. 0.006 NASM per equivalent vol. for 300,000-600,000 vols. 0.005 NASM per equivalent vol. for remainder of collection
	Study	0.5 NASM per FFTE undergraduate 1.0 NASM per FFTE prof. undergrad 0.7 NASM per FTE graduate student
	Service	0.25 x (Stack and Study)
7.	Athletics	0.9 NASM per FTE student, plus 2,000 NASM for institutions with less than 4,000 FFTE 1,000 NASM for institutions with 4,000 to 8,000 FFTE
8.	Maintenance Shops	0.015 x (total NASM inventory)
9.	Student and Central Services	2.0 NASM per FTE student

(benchmark space factors ranges)

Food Service	0.5 - 0.7	NASM per FTE student
Merchandising and Bookstore	0.1 - 0.2	NASM "
Audio/Visual	0.05 - 0.1	NASM "
Computer, Shops and Stores	0.1 - 0.3	NASM "
Health Service	0.03 - 0.05	NASM "
Common Use and Student Activity	0.5 - 0.7	NASM "
Assembly and Exhibition	0.15 - 0.4	NASM "